

\*143SERBSF10,609\*

\*143SERBSF10,609\*

Site Name (Subject): OLD MOUNT HOLLY ROAD PCE SITE

Site ID (Document ID): NCD986172518

Document Name (DocType): Correspondence (C)

Report Segment: 2

Description: General Correspondence, 1994 - 1998

Date of Document: 11/10/1998

Date Received: 11/12/1998

Box: *Enter SF and # with no spaces* SF10,609

Access Level: PUBLIC

Division: WASTE MANAGEMENT

Section: SUPERFUND

Program (Document Group): SERB (SERB)

Document Category: FACILITY

Print Report for  
Record

Go to New  
Blank Record

Go to New Record -  
(default to last  
record values)

Delete Record

# OLD MOUNT HOLLY ROAD PCE SITE

NCD 986 172 518

## *Folders*

1. General Correspondence file #1, 1987—1993
2. General Correspondence file #2, 1994—

## *Bound Reports*

1. Site Investigation: September 1994
2. Site Investigation, Reference 30—Appendices A-F: September 1994
3. Site Investigation, Reference 30—Appendices G-H: September 1994
4. Preliminary Assessment: September 1991

## *Three-Ring Binders*

(See shelves above filing cabinets)

1. Site Inspection—References 4-15: September 1994
2. Site Inspection—References 16-60: September 1994
3. Site Inspection—References 61-84: September 1994



U.S. ENVIRONMENTAL PROTECTION AGENCY

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## Superfund Site Information

### OLD MT. HOLLY ROAD PCE SITE

#### Site Information

[Site Info](#) | [Aliases](#) | [Operable Units](#) | [Contacts](#)  
[Actions](#) | [Contaminants](#) | [Site-Specific Documents](#)

**Site Name:** OLD MT. HOLLY ROAD PCE SITE  
**Street:** 7911 OLD MT. HOLLY ROAD  
**City / State / ZIP:** CHARLOTTE, NC 28214

**NPL Status:** Not on the NPL  
**Non-NPL Status:** NFRAP

**EPA ID:** NCD986172518  
**EPA Region:** 04  
**County:** MECKLENBURG

**Federal Facility Flag:** Not a Federal Facility  
**Incident Category:** Housing Area/Farm

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## Superfund Site Information

### OLD MT. HOLLY ROAD PCE SITE

#### Contacts

[Site Info](#) | [Aliases](#) | [Operable Units](#) | [Contacts](#)  
[Actions](#) | [Contaminants](#) | [Site-Specific Documents](#)

Title	Name	Phone Number
Remedial Project Manager (RPM)	Jon Borholm	(404) 562-8820
Remedial Project Manager (RPM)	Luis Flores	(404) 562-8807
Remedial Project Manager (RPM)	Ken Lucas	(404) 562-8953
Remedial Project Manager (RPM)	Ken Mallary	(404) 562-8802
Remedial Project Manager (RPM)	DON RIGGER	(404) 347-3931
On-Scene Coordinator (OSC)	DON RIGGER	(404) 347-3931
Remedial Project Manager (RPM)	Michael Townsend	(404) 562-8813
Remedial Project Manager (RPM)	Samantha UrquhartF	(404) 562-8760
Remedial Project Manager (RPM)	Phil Vorsatz	(404) 562-8789
Site Assessment Manager (SAM)	Jennifer Wendel	(404) 562-8799

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## Superfund Site Information

### OLD MT. HOLLY ROAD PCE SITE

#### Actions

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[Actions](#) | [Contaminants](#) | [Site-Specific Documents](#)

<u>OU</u>	<u>Action Name</u>	<u>Qualifier</u>	<u>Lead</u>	<u>Actual Start</u>	<u>Actual Completion</u>
00	DISCOVERY		F		04/06/1990
00	REMOVAL	C	F	04/06/1990	05/04/1990
00	PRELIMINARY ASSESSMENT	H	S		11/25/1991
00	SITE INSPECTION	H	S	01/27/1993	10/13/1994
00	INTEGRATED ASSESSMENT	H	F	03/14/1995	03/14/1995
00	REMOVAL	C	F	04/12/1996	01/08/1997
00	EXPANDED SITE INSPECTION	N	F	09/04/1997	09/30/1998

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NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES  
MOORESVILLE REGIONAL OFFICE



DIVISION OF WASTE MANAGEMENT

November 10, 1998

NOV 12 11 1:05  
RECEIVED

JAMES E. HUNT JR.  
GOVERNOR

The Honorable Marc Basnight  
2007 Legislative Building  
Raleigh, North Carolina 27601

WAYNE MCDEVITT  
SECRETARY

Subject: Castles Auto and Truck Sales  
6800 Freedom Drive, Charlotte  
Mecklenburg County, N.C.  
Incident #: 1647

Dear Senator Basnight:

On November 5, 1998, I talked with your aide, Mr. Rolf Blizzard, concerning your request for a brief site history on the property located at 6800 Freedom Drive, Charlotte, North Carolina owned by Mrs. Jean Castles. The site is located in the center of an area that contains 14 active bulk petroleum distribution facilities collectively known as the Paw Creek Terminals. The Mooresville Regional Office has several file cabinets dedicated to this property and the surrounding Paw Creek Terminals. The following is a brief history of the subject site.

On February 26, 1981, Castles Pit Stop Marina, Inc., president, Mrs. Jean Castles, purchased the subject property from Exxon Corporation (see attachment A). When the Castles purchased the property they also became the owner of the three underground storage tanks (USTs) located on the property: a 4500-gallon kerosene UST (Tank "A"), a 550-gallon waste oil UST (Tank "B") and a 550-gallon kerosene UST (Tank "C") (see attachment B). In an effort to determine the "Regulatory Owners" of the USTs, the Mooresville Regional Office Groundwater Section requested and reviewed affidavits from the former property owners, UST owners and UST operators. The affidavits were then forwarded to the Attorney General's Office for the final determination of regulatory ownership. The Attorney General's Office determined that Exxon was the regulatory owner of Tanks "A" and "C" and that Exxon and Castles were the regulatory owner of Tank "B" (See attachment C).

In 1991, Tank "C" was removed from the ground. Upon removal, it was determined that Tank "C" was actually a 1,500 gallon tank and not a 550-gallon tank as was previously thought. Petroleum contaminated soil and groundwater were confirmed to be present following the removal of the tank. The predominant contaminant was believed to be diesel as reported by laboratory personnel after reviewing the laboratory results. On December 1, 1993, the Division of Environmental Management (DEM) approved Exxon's corrective action plan for the remediation of the contamination associated with Tank "C".

Castles Auto and Truck Sales  
November 10, 1998  
Page Two

In May 1994, Exxon removed Tank "A" from the ground. Petroleum contaminated soil and groundwater was discovered following tank removal. Due to the proximity of Tank "A" and "C" DEM requested that the corrective action plan previously approved on December 1, 1993 be modified to include the contamination identified around Tank "A". On March 17, 1995, Exxon submitted the modified corrective action plan to address the soil and groundwater cleanup resulting from the releases associated with Tank "A" and Tank "C". The corrective action plan was not approved due to the unknown impact the remediation plan would have had on the solvent contamination associated with Tank "B" (which was still in the ground) and the refusal of the Castles to grant property access to Exxon to implement the plan .

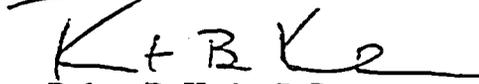
The contamination discovered around Tank "B" during the assessment for Tank "A" showed both petroleum and chlorinated solvent soil and groundwater contamination. Both Castles and Exxon refused to proceed with the removal of Tank "B" citing it was the other parties responsibility. Both parties know the extensive clean-up costs and liabilities associated with a chlorinated solvent release compared to a gasoline release. The Division of Waste Management Superfund Section became involved with this pollution incident site when chlorinated solvents were discovered in a nearby resident's water supply wells in 1990. In a September 1994 Site Inspection Report, the Superfund Section noted that the soil around Tank "B" may be the cause of chlorinated solvent contamination that was being detected in up to 11 nearby drinking water wells. Through the efforts of the Groundwater Section, Hazardous Waste Section and the EPA, Tank "B" was removed by the Environmental Protection Agency's Emergency Response and Removal Branch in November 1996. Since the removal of Tank "B", no further environmental clean-up has occurred on the Castles property. The Castles have refused property access to the site and have cemented over the existing monitoring wells which would preclude any future monitoring, assessment or remediation efforts on this site.

Located across the street from this facility is the Charlotte area bulk storage facility for Exxon. Exxon has had documented releases from several areas located on their bulk terminal property. Currently Exxon has two remediation systems in operation for the areas that are showing soil and/or groundwater contamination. Free phase petroleum product is being reported in the center of the bulk terminal facility. The monitoring wells located along freedom drive across from the Castles' property do not contain free phase petroleum product (see attachment B). The State has required Exxon to perform groundwater sampling on a semiannual basis to monitor their remediation efforts but due to the Castles not granting property access the last sampling event on the subject property occurred in February 1995. During the last sampling event no free phase petroleum product was reported on the Castles property.

Castles Auto and Truck Sales  
November 10, 1998  
Page Three

I have tried to condense the history as much as practical, however, should you require additional information please feel free to call me at (704) 663-1699 ext. 203.

Sincerely,

A handwritten signature in black ink, appearing to read "R + B Krebs". The signature is stylized with a large "R" and "B" connected by a plus sign, followed by "Krebs".

Robert B. Krebs, P.G.  
Regional UST Section Supervisor

Attachments

cc: Bill Reid - UST Section

Rbk\castles.his

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



August 5, 1997

Mr. Richard E. Morton  
Kilpatrick Stockton LLP  
3500 One First Union Center  
301 South College Street  
Charlotte, NC 28202-6001

Subject: Old Mt. Holly Road PCE Site  
Charlotte, Mecklenburg County, NC  
NCD 986 172 518

Dear Mr. Morton:

I am writing in response to your letter of July 2, 1997 to Mr. Robert Gelblum, Assistant Attorney General representing the Superfund Section. In that letter you requested that "the Department" redefine the location of the subject site in a way that does not identify the Stogner property (or any other specific property) as the location of the Old Mt. Holly Road PCE Site. It appears that your concern was that the Department had identified the Stogner property (7911 Old Mt. Holly Road ) as the address of the Old Mt. Holly Road PCE Site.

As we discussed, the Old Mt. Holly Road PCE Site is listed in the US EPA CERCLIS inventory (CERCLA Information System) at 7911 Old Mount Holly Road since the site was first identified by the contaminated well on the Stogner property. After further investigation of nearby properties, a source of PCE contamination was identified on another parcel located across the street at 6800 Freedom Drive. After the 1994 site investigation, the Superfund Section changed the listed site address to 6800 Freedom Drive and the corresponding geographic coordinates to those of the known source area. We have subsequently changed the site's street address in our State inventories to "Old Mount Holly Road and Freedom Drive", which is the intersection at which both the Stogner Property and the other parcel are located. However, as you are aware, given the contamination at the Stogner property, this property is still considered to be part of the Old Mt. Holly Road PCE Site under CERCLA and the NC Inactive Hazardous Sites Response Act.

Mr. Richard E. Morton  
August 5, 1997  
Page 2

In regard to changing the street address listed for this site in the US EPA CERCLIS inventory, I suggest you contact Mr. Phil Vorsatz, Chief, NC Site Management Section, US EPA Region IV at (404) 562-8789.

Sincerely,

A handwritten signature in black ink, appearing to read 'Pat DeRosa', with a long horizontal flourish extending to the right.

Pat DeRosa, Head  
Site Evaluation and Removal Branch  
Superfund Section

cc: Rob Gelblum  
Phil Vorsatz  
Jack Butler  
Charlotte Jesneck  
Jeanette Stanley

FILE

**MEMO**

**DATE:** July 22, 1997  
**TO:** File  
**FROM:** Jeanette Stanley, Environmental Chemist,  
NC Superfund Section  
**RE:** Old Mount Holly Road PCE Site  
Charlotte, Mecklenburg County, NC  
NCD 986 172 518



It has come to our attention that the CERCLIS list still has the Naomi Stogner address at 7911 Old Mount Holly Rd. as the site address. I checked my memos on the street address and then I called Rick Morton with Petree Stockton (704) 338-5011, attorney for Exxon to confirm the street addresses.

The Exxon terminal street address is 6801 Freedom Drive. 6800, 6824 and 6832 are correct street addresses for the Castles property. The street address for the brick garage (next to which Tank B was removed) is 6800 Freedom Drive, 6824 is the white frame house, and 6832 is the out building that Mr. Castles rented out for storage.

The Site Inspection Report has 6800 Freedom Drive as the street address.

Post-it Fax Note	7671	Date	7/2/97	# of pages	5
To	DAVID KOSA	From	Rob Gelblum		
Company	SUPERFUND	City	ATLANTA		
Phone #		Phone #			
Fax #	733-1811	Fax #	716-6939		

KILPATRICK STOCKTON LLP

RECEIVED

JUL 3 1997

N.C. ATTORNEY GENERAL  
Environmental Division

July 2, 1997

Attorneys at Law  
3500 Old First Union Center  
301 South College Street  
Charlotte, North Carolina 28202-6001  
Telephone: 704.338.5000  
Facsimile: 704.338.5125

RICHARD E. MORTON  
Also Admitted in South Carolina  
E-mail: rmorton@kilstock.com  
Direct Dial: 704.338.5011

VIA FACSIMILE 919.716.6939

Robert Gelblum, Esquire  
Assistant Attorney General  
P. O. Box 629  
Raleigh, North Carolina 27602

**Re: Old Mt. Holly Road PCE Site - Charlotte, North Carolina**

Dear Rob:

Thank you for taking the time to speak with me on the telephone the other day. As we discussed, my client, Exxon Company, U.S.A. ("Exxon"), operates a petroleum distribution facility located at 6800 Freedom Drive, Charlotte, North Carolina. Exxon's terminal is situated on the northwest quadrant of the intersection between Old Mt. Holly Road and Freedom Drive. Consequently, Old Mt. Holly Road borders Exxon's terminal to the south and Freedom Drive runs along the easternmost property line. I have enclosed a few maps for your convenience and ease of reference.

There are five residential and commercial properties across Old Mt. Holly Road from Exxon's terminal, although, to the best of my knowledge, they are all zoned for industrial use. Exxon is interested in purchasing these properties to help create a buffer around the operations at its terminal.

Unfortunately, one of these properties, tax parcel 055-012-04 owned by Ms. Naomi Stogner, is identified as the Old Mt. Holly Road PCE Superfund Site by the Department's Superfund Section. However, it appears that this designation was made for the sake of convenience and not because there is a source of PCE contamination on that property. In particular, it does not appear that the Department has ever identified, or that it currently suspects, any source of contamination on Ms. Stogner's property. Moreover, in our due diligence site investigations, which included soil and groundwater sampling, we did not identify a source of PCE on Ms. Stogner's property.

Atlanta • Augusta • Brussels • Charlotte • London • Raleigh • Washington • Winston-Salem

**KILPATRICK STOCKTON LLP**

July 2, 1997

Page 2

To the best of our knowledge, the Old Mt. Holly Road PCE site is considered by the Superfund Section to be a fairly widespread area where low concentration chlorinated hydrocarbons may appear in groundwater. There are likely many different sources for this groundwater contamination, including textile operations, dry cleaners, auto repair businesses and body shops, none of which ever operated on Ms. Stogner's property. The fact that this contaminant is not pervasive in the area, but appears only in certain localized groups of water supply wells, also supports the theory that there are many different local sources. A potential source of this contamination was the subject of an EPA Region IV removal action last year when an underground storage tank was removed from the nearby Castles Auto and Body Shop property (the "Castles Property"). The Castles Property is located across the corner from Ms. Stogner's property. Exxon's terminal operations are not a source of PCE contamination and Exxon has already demonstrated this fact in its previous answers to the Superfund Section's questions along these lines.

In short, although Ms. Stogner's property is not known to be a source of PCE contamination, it was designated as the location of the Old Mt. Holly Road PCE site simply because Ms. Stogner's water supply well was one of the first in the area to be discovered contaminated with PCE and other chlorinated hydrocarbons.

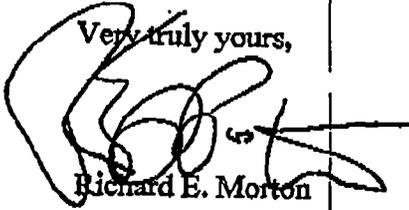
While Exxon wants to purchase Ms. Stogner's property, it does not want to take title to a state superfund site. In addition, I understand that Ms. Stogner, who is over 90 years old and still lives in her house alone, wishes to sell her property so she can move to South Carolina and live with relatives she has there. The Department's designation of her property as a superfund site makes it impossible for Exxon to purchase that property and may make it impossible for her to sell the property at all. Therefore, we request that the Department redefine the location of the Old Mt. Holly Road site in such a way that does not identify Ms. Stogner's property (or any other specific property) as the location of that site. This would allow Ms. Stogner to sell her property and would also help Exxon to create a buffer around its terminal operations.

**KILPATRICK STOCKTON LLP**

July 2, 1997  
Page 3

I appreciate your attention to this matter and look forward to hearing from you soon.  
If you have any questions, please do not hesitate to call me.

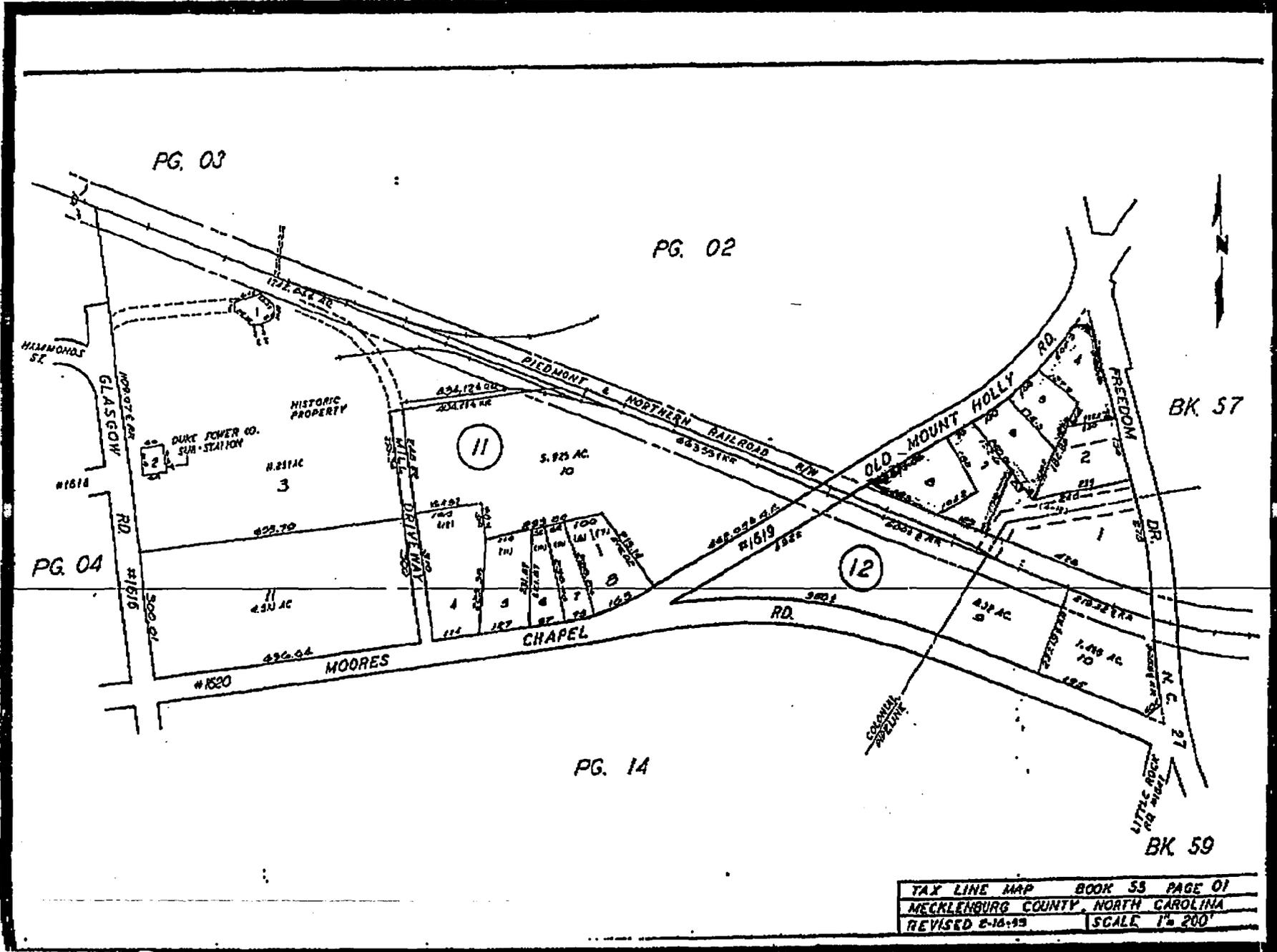
Very truly yours,

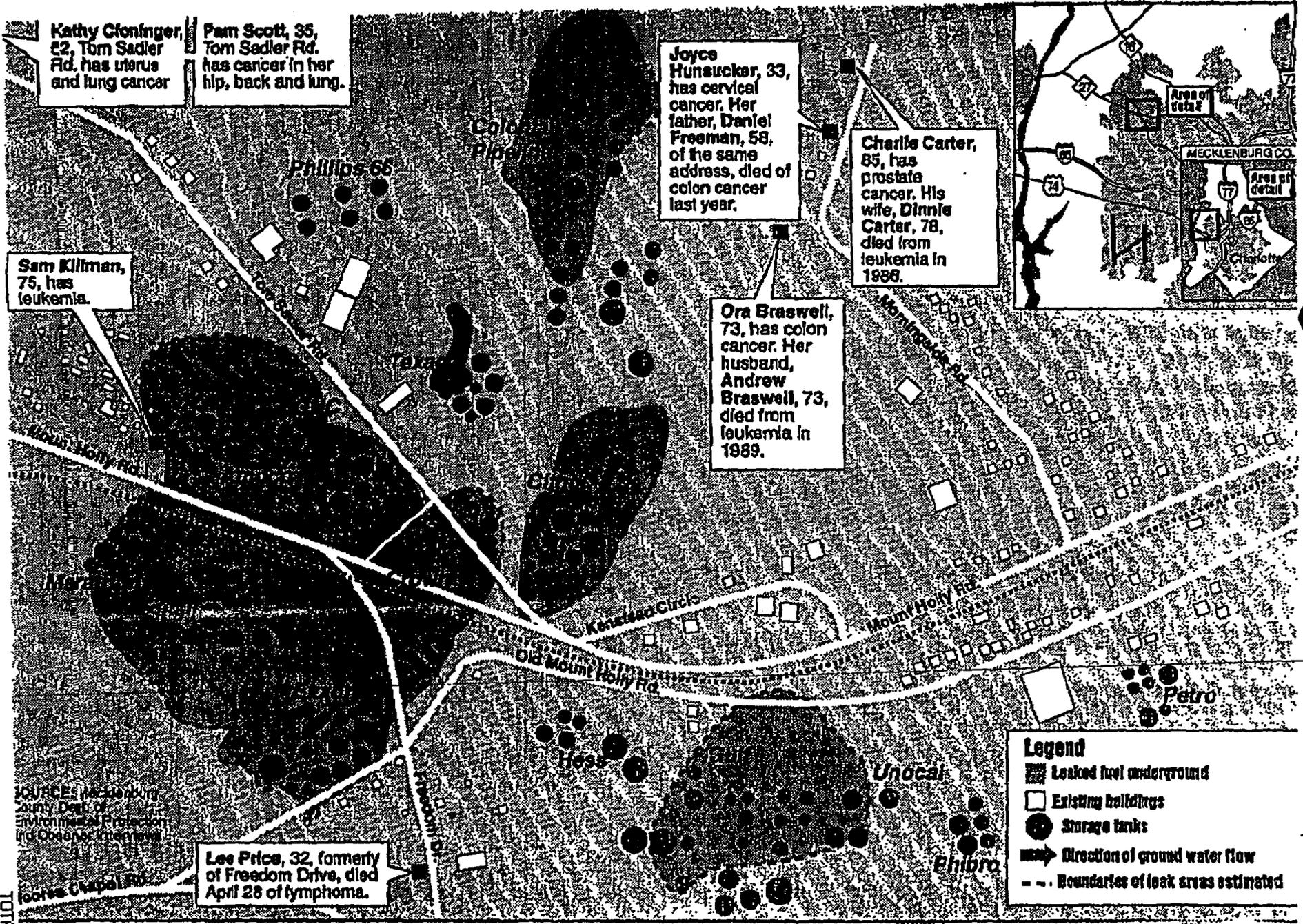
A handwritten signature in black ink, appearing to read "REM", is written over the typed name "Richard E. Morton". The signature is stylized and somewhat illegible.

Richard E. Morton

REM/pld  
Enclosures

919420386.147282  
194296656.DOC





Kathy Gioninger, 82, Tom Sadler Rd. has uterus and lung cancer

Pam Scott, 35, Tom Sadler Rd. has cancer in her hip, back and lung.

Joyce Hunsucker, 33, has cervical cancer. Her father, Daniel Freeman, 58, of the same address, died of colon cancer last year.

Charlie Carter, 85, has prostate cancer. His wife, Dinnie Carter, 78, died from leukemia in 1988.

Sam Killman, 75, has leukemia.

Ora Braswell, 73, has colon cancer. Her husband, Andrew Braswell, 73, died from leukemia in 1989.

Lee Price, 32, formerly of Freedom Drive, died April 28 of lymphoma.

**Legend**

- Leaked fuel underground
- Existing buildings
- Storage tanks
- Direction of ground water flow
- Boundaries of leak areas estimated

SOURCE: Mecklenburg County Dept. of Environmental Protection and Oceanic Management

TOTAL P.05

December 20, 1996

To: File

From: Jack Butler *JMB*

Subject: Paw Creek

Ron Wilson, EPA Ombudsman (404/562-8678), contacted our office on this date to inform us that he and Diane Barrette will be visiting the Paw Creek Site and community on January 16, 1997. Mr. Wilson was informed that Jeannette Stanley of our office will probably be joining them if her schedule allows.

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



STATE FILE

December 9, 1994

Mr. Bobby Cloninger  
Paw Creek Environment, Health, and Safety Committee  
P. O. Box 571  
Paw Creek, NC 28130

Dear Mr. Cloninger:

Enclosed are recent additions to the **Old Mount Holly Road PCE Site file.**

Please call me at (919) 733-2801 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads 'Jeanette Stanley'.

Jeanette Stanley  
Environmental Chemist  
NC Superfund Section

CC: Pat DeRosa, Head, NC Superfund Section (cover letter only)  
Debbie Crane, NC DEHNR Public Affairs Office (cover letter only)  
Jim Gulick, Department of Justice, Environmental Protection Section



REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IV

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

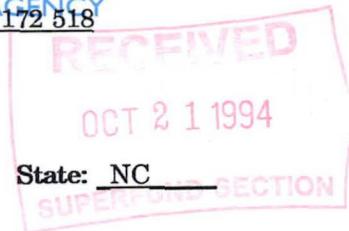
Site Name: Old Mount Holly Road PCE Site

EPA ID#: NCD 986 172 518

REGION 4

Alias Site Names: \_\_\_\_\_

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365



City: Charlotte

County or Parish: Mecklenburg

State: NC

Refer to Report Dated: September 30, 1994

Report type: Site Inspection

Report developed by: J. Stanley - NCDEHNR

DECISION:

1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:

1a. Site does not qualify for further remedial site assessment under CERCLA  
(No Further Remedial Action Planned - NFRAP)

1b. Site may qualify for further action, but is deferred to: RCRA NRC

2. Further Assessment Needed Under CERCLA: 2a. (optional) Priority: Higher Lower

2b. Activity Type: PA SI ESI HRS evaluation

Other: \_\_\_\_\_

DISCUSSION/RATIONALE: There is documented PCE contamination in the subsurface soil around UST B and in the oil/water separator contents on the Castles' property. PCE was detected in ground water on the Castles' and Exxon properties. The three nearest downgradient private wells are highly contaminated with PCE and its degradation products. There are an additional 8 PCE-contaminated wells within 1/2 mile of the site, 30 PCE-contaminated wells between 1/2 and 1 mile, and 62 PCE-contaminated wells within 1-2 miles of the site.

The Old Mount Holly Road PCE Site may be contributing PCE to the wetlands along the Long Creek surface water pathway by ground water to surface water discharge. However, this has not been documented.

Removal of contaminated soils around Tank B and the oil/water separator on the Castles' property is recommended to reduce continued migration of PCE to ground water. Additional soil sampling in these areas may be required to support data quality objectives if an ESI is required. Additional ground water data is expected to be generated as a result of upcoming well installation and sampling events planned by petroleum companies in the Paw Creek area. A request to EPA for an emergency removal of UST B was denied on October 29, 1993.

Citizenry has formed the PAW Creek Health and Safety Committee to oversee environmental activities.

Report Reviewed and Approved by: Cynthia K. Gurley Signature: Cynthia Gurley Date: 10/13/94

Site Decision Made by: Cynthia K. Gurley Signature: Cynthia Gurley Date: 10/13/94

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

March 23, 1995



Mr. John Gibson  
Solid and Hazardous Waste Program Manager  
Mecklenburg County Department of Environmental Protection  
700 N. Tryon Street  
Charlotte, NC 28202

Subject: Old Mount Holly Road PCE Site (NCD986172518)  
Charlotte, Mecklenburg County

Dear Mr. Gibson:

As you are aware, our office recently sent the U.S. Environmental Protection Agency (EPA) a request to evaluate the subject site for an immediate removal action. Attached, please find the response we recently received from the EPA regarding this request. As you can see, the EPA Emergency Response and Removal Branch has designated the site as a high priority for a potential removal action. This means that EPA has assigned an On-Scene Coordinator (OSC) to the site who may visit the site and make a final determination as to the extent of removal, if any, that is required.

We have not been informed as to EPA's project schedule for the site visit. However, if you need specific schedule information, the attached letter provides the name and phone number of the EPA OSC assigned to the site. Because any new data that arises may be useful to the State and the OSC, please advise us of any changes in or updates to site conditions that you feel are warranted. We will be glad to pass this information on to EPA.

If you have any questions or have additional data concerning the site, please feel free to contact Jeanette Stanley or me at (919) 733-2801, or directly contact the EPA OSC at the number listed on the attached letter.

Sincerely

Jack Butler, PE, Head  
Remediation Branch

attachment

cc: Michael Kelly  
Doug Holyfield  
Phil Prete  
Pat DeRosa  
Bruce Nicholson  
Pat Williamson  
Jeanette Stanley  
Cindy Gurley



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

MAR 14 1995



4WD-ERRB

Mr. Mike Kelly, Director  
Solid Waste Management Division  
North Carolina Division of  
Solid Waste Management  
P.O. Box 27687  
Raleigh, North Carolina 27611-7687

SUBJ: Old Mt. Holly Road, Charlotte, North Carolina

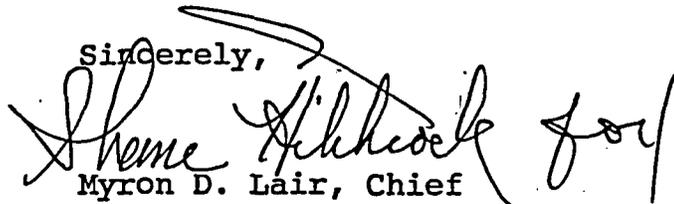
Dear Mr. Kelly:

During January of 1995, the U.S. Environmental Protection Agency's Emergency Response and Removal Branch (ERRB) conducted a site investigation for potential removal action eligibility under the National Contingency Plan (NCP) at the above referenced site. Results from the investigation were evaluated using criteria from Section 300.415 of the NCP and current ERRB program guidance.

Based upon ERRB's initial review of the available information, the site has been designated as a high priority for a potential removal action. Don Rigger, ERRB On-Scene Coordinator (OSC), has been assigned to the site. The OSC will review the site evaluation and current site conditions and make a final determination of the appropriateness and extent of removal actions to be taken at the site. For all removal actions an Action Memorandum outlining the site threats and removal activities will be prepared by the OSC and a copy forwarded to the State. Should the OSC make a final determination that a removal action is not warranted, you will be subsequently notified of the change in prioritization of the site.

Should you have any questions concerning ERRB's determination, please contact Mr. Don Rigger, On-Scene Coordinator, at (404) 347-3931 extension 6140 or Mr. Shane Hitchcock, Chief of Removal Operations Section, at (404) 347-3931 extension 6122.

Sincerely,



Myron D. Lair, Chief  
Emergency Response and Removal  
Branch

cc: Narindar Kumar, Site Assessment Section, EPA

# MEMO

TO: Pat

DATE: 2/2/94

SUBJECT: Old Mt. Holly Rd.  
PLE site

Talked w/ Rob Krebs today (Moorsville Reg.)  
He said Don Riggan was at Castles' last  
week. EPA will be removing Tank B,  
O/W Separator & soil & working w/  
Rob on treatment. EPA will then  
seek cost recovery.

From: Jamie



North Carolina Department of Environment,  
Health, and Natural Resources



Printed on Recycled Paper

December 7, 1994

To: File

From: Jack Butler

Subject: Potter's Septic Tank Service Pitts, NCD981023260  
Old Mt. Holly Road PCE Site, NCD986172518

Ms. Diane Barrett, EPA Region IV contacted our office on this date to update us on the subject sites. Ms. Barrett reported that a contract has been awarded to McLauren and Hart from Philadelphia to perform the remedial design for the thermal desorption process. Ms. Barrett also reported that the Self Directed Work Group had made a decision to do no action at the Old Mt. Holly Road PCE Site (Paw Creek Site) due to the petroleum exclusion under Superfund. Ms. Barrett also requested a copy of the Paw Creek Pact Report that she said N.C. DEHNR, Mecklenburg County, and eleven petroleum companies had agreed to prepare.

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

*File - Old Mt. Holly Rd. PCE*



November 7, 1994

Cohen Milstein  
Attn: Gail Regina  
1100 New York Ave., NW  
West Tower, Suite 500  
Washington, DC 20005

Dear Ms. Regina:

Per your request, I am providing you with a better copy of the map found at Reference 10 of the Old Mount Holly Road PCE Site Inspection. I sorry that the original copy provided by NC Superfund Section to the Paw Creek Environment Health and Safety Committee was unclear.

Please be advised that there is normally a charge for copies and that the consultant normally comes to our office to make the copies. The one copy of the references was provided to the Paw Creek Committee per instructions I received from NC DEHNR.

If you wish to see our files or receive multiple copies of other material, please make an appointment with Scott Ross at (919) 733-2801 to ensure that adequate facilities are available. If you have any questions, you can reach me at the same number.

Sincerely,

Jeanette Stanley

File

**MEMO**

DATE: October 28, 1994

TO: File

FROM: Jeanette Stanley, Environmental Chemist,  
NC Superfund Section



RE: Old Mount Holly Road PCE Site  
Charlotte, Mecklenburg County, NC  
NCD 986 172 518

A copy of references to the Old Mount Holly Road PCE Site was mailed to the Paw Creek Environment, Health, and Safety Committee today. I called Mr. Cloninger and told him that the copy was on its way.

**MEMO**

DATE: October 25, 1994

TO: File

FROM: Jeanette Stanley, Environmental Chemist,  
NC Superfund Section



RE: Old Mount Holly Road PCE Site  
Charlotte, Mecklenburg County, NC  
NCD 986 172 518

A copy of the Old Mount Holly Road PCE Site Inspection report was requested by B. J. McMillan, assistant to Mr. Ed Turlington, Executive Assistant to Governor Hunt. Mr. Neil Castles had called Mr. Turlington's office. Mr. Turlington wanted to read the report so that he could respond properly to Mr. Castles.

I called Jim Gulick, Special Deputy Attorney General (919) 733-5725, to whom I had supplied three copies on the previous Friday. He said that I could use one of his copies and that I should request that a page come to his office at 1204 Archdale and pick up the copy. I called B.J. McMillan and relayed this information.

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

*file - old Mt. Holly Rd. PCE site*



October 21, 1994

Mr. Jim Gulick, Special Deputy Attorney General  
State of North Carolina  
Environmental Protection Section  
P.O. Box 629  
Raleigh, NC 27602-0629

Dear Mr. Gulick:

Per your request, I am sending you three copies of the Site Inspection Report conducted on the Old Mount Holly Road PCE Site. This report was submitted to the US EPA Region IV Office in Atlanta, GA. I have not enclosed a copy of the references due to the volume of material. Also enclosed is the removal request submitted to EPA regarding the PCE-contaminated soil in the vicinity of Tank B. I spoke with EPA yesterday and they will be meeting next week to discuss the removal request.

Please be advised that this is a draft report and it may be revised by US EPA. It will not be considered a final report until EPA officially approves it.

If you have any questions, you may call me at (919) 733-2801.

Sincerely,

Jeanette Stanley  
Environmental Chemist

Enclosures

cc: Paw Creek Environment, Health and Safety Committee

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



October 21, 1994

Senator T. LaFontine Odum  
1110 S. Tryon St.  
Charlotte, NC 28203

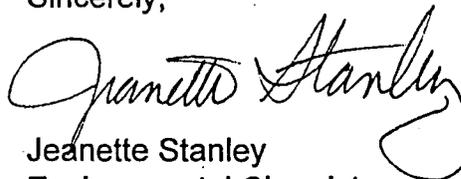
Dear Sen. Odum:

As requested by Mr. Bobby Cloninger of the Paw Creek Environmental Health and Safety Committee, I am sending you a copy of the Site Inspection Report conducted on the Old Mount Holly Road PCE Site. This report was submitted to the US EPA Region IV Office in Atlanta, GA. I have not enclosed a copy of the references due to the volume of material. Also enclosed is the removal request submitted to EPA regarding the PCE-contaminated soil in the vicinity of Tank B. I spoke with EPA yesterday and they will be meeting next week to discuss the removal request.

Please be advised that this is a draft report and it may be revised by US EPA. It will not be considered a final report until EPA officially approves it.

If you have any questions, you may call me at (919) 733-2801.

Sincerely,

  
Jeanette Stanley  
Environmental Chemist

Enclosures

cc: Paw Creek Environment, Health and Safety Committee

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

October 21, 1994

Mr. Rob Krebs  
NC DEM Mooresville Regional Office  
919 North Main Street  
Mooresville, NC 28115

Dear Mr. Krebs:

Enclosed is the draft report of the Site Inspection conducted on the Old Mount Holly Road PCE Site. This report was submitted to the US EPA Region IV Office in Atlanta, GA. I am not including a copy of the references due to the volume of material. You have already received the removal request submitted to EPA regarding the PCE-contaminated soil in the vicinity of Tank B. I spoke with EPA yesterday and they will be meeting next week to discuss the removal request.

Please be advised that this report may be revised by US EPA and will not be considered a final report until EPA officially approves it.

If you have any questions, you may call me at (919) 733-2801.

Sincerely,

A handwritten signature in cursive script that reads "Jeanette Stanley". The signature is written in black ink and is positioned above the printed name and title.

Jeanette Stanley  
Environmental Chemist

Enclosures

cc: Paw Creek Environment, Health and Safety Committee

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



October 21, 1994

Representative Billy W. Joye, Jr.  
215 Dogwood Land  
Belmont, NC 28012

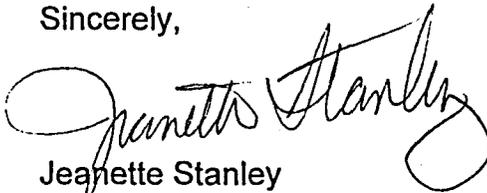
Dear Rep. Joye:

As requested by Mr. Bobby Cloninger of the Paw Creek Environmental Health and Safety Committee, I am sending you a copy of the Site Inspection Report conducted on the Old Mount Holly Road PCE Site. This report was submitted to the US EPA Region IV Office in Atlanta, GA. I have not enclosed a copy of the references due to the volume of material. Also enclosed is the removal request submitted to EPA regarding the PCE-contaminated soil in the vicinity of Tank B. I spoke with EPA yesterday and they will be meeting next week to discuss the removal request.

Please be advised that this is a draft report and it may be revised by US EPA. It will not be considered a final report until EPA officially approves it.

If you have any questions, you may call me at (919) 733-2801.

Sincerely,



Jeanette Stanley  
Environmental Chemist

Enclosures

cc: Paw Creek Environment, Health and Safety Committee

Office of the Governor  
Legislative Counsel  
Administration Bldg. Room 1030

NORTH CAROLINA LEGISLATIVE INQUIRY REPORT

Department OF Environment, Health & Natural Resources

DATE: October 21, 1994

TELEPHONE   x                        VERBAL                                 LETTER           

SENATOR / REPRESENTATIVE   T. LaFontine Odum  

PERSON RECEIVING INQUIRY   Jeanette Stanley  

REFERRED W/I DEPARTMENT   no  

**SUBJECT OF INQUIRY:** Mr. Bobby Cloninger, Chairman of the Paw Creek Environmental Health and Safety Committee, requested that a copy of the Old Mount Holly Road PCE Site Inspection report be sent to Senator Odum. Request was made on October 20, 1994

**ACTION TAKEN:** Sent report October 21, 1994

Return Copy of Blue Sheet to Legislative & Intergovernmental Affairs Suite  
1425, Archdale Bldg. PO Box 27687, Raleigh, NC 27611 (919) 715-4148

Office of the Governor  
Legislative Counsel  
Administration Bldg. Room 1030

NORTH CAROLINA LEGISLATIVE INQUIRY REPORT

Department OF Environment, Health & Natural Resources

DATE: October 21, 1994

TELEPHONE   x                        VERBAL                                 LETTER           

~~SENATOR~~ / REPRESENTATIVE   Billy W. Joye, Jr.  

PERSON RECEIVING INQUIRY   Jeanette Stanley  

REFERRED W/I DEPARTMENT   no  

SUBJECT OF INQUIRY:

Mr. Bobby Cloninger, Chairman Paw Creek Environmental Health and Safety Committee, requested that a copy of the Old Mount Holly Road PCE Site Site Inspection report be sent to Representative Joye. Request was made on October 20, 1994

ACTION TAKEN: Sent report October 21, 1994

Return Copy of Blue Sheet to Legislative & Intergovernmental Affairs Suite  
1425, Archdale Bldg. PO Box 27687, Raleigh, NC 27611 (919) 715-4148



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

OCT 19 1994

OCT 21 1994

4WD-WPB

Ms. Pat DeRosa, Head  
CERCLA Branch  
North Carolina Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management  
P.O. Box 27687  
Raleigh, North Carolina 27611-7687

Dear Ms. DeRosa:

The following reports have recently been reviewed and accepted by EPA - Region IV Site Assessment Section:

Preliminary Assessments

Pinewood Dump Site  
Wayne County  
NCD 986 188 043

No Further Remedial Action  
Planned (NFRAP).

Site Inspections

Old Mount Holly Road PCE Site  
Mecklenburg County  
NCD 986 172 518

Further Action (FA).

Spann Property  
Henderson County  
NCD 986 180 917

NFRAP

Site Inspection Prioritizations (SIPs)

Athol Manufacturing Corp.  
Granville County  
NCD 072 003 635

NFRAP

Gulf Oil Corporation  
Guilford County  
NCD 067 437 400

NFRAP

H & S Processors, Inc. Lincoln County NCD 049 772 023	NFRAP
Helena Chemical Company Halifax County NCD 980 483 275	NFRAP
Hope Mills Landfill Cumberland County NCD 980 502 983	NFRAP
Kaiser Fertilizer Plant Columbus County NCD 980 842 470	NFRAP
Rhoder Drive Wells Union County NCD 986 176 030	NFRAP
Rowland Landfill Wake County NCD 065 300 113	NFRAP
Smith Farm Colfax #3 Guilford County NCD 980 503 114	NFRAP
Waxhaw Storage Tanks Union County NCD 981 030 836	NFRAP

**Expanded Site Inspections**

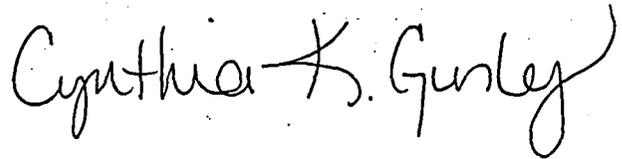
Davis Park Road TCE Site Gaston County NCD 986 175 644	FA
--	----

Enclosed please find the Remedial Site Assessment Decision Forms for each report generated by the North Carolina Superfund program and a copy of the actual report generated by the EPA Contractor.

In addition, I have enclosed a copy of the CERCLA Site Status Report for North Carolina.

If you have any questions concerning these site decisions,  
please call me at (404) 347-5059, Extension 6150.

Sincerely,

A handwritten signature in cursive script that reads "Cynthia K. Gurley". The signature is written in dark ink and is positioned above the typed name.

Cynthia K. Gurley  
North Carolina, PO

Enclosures



*File:  
Old ATC Retinery*

State of North Carolina

MICHAEL F. EASLEY  
ATTORNEY GENERAL

Department of Justice  
P. O. BOX 629  
RALEIGH  
27602-0629

--MEMORANDUM--

TO: Bill Meyer, Director  
Division of Solid Waste Management

FROM: Rob Gelblum, Asst. Atty. General *RG*  
Environmental Division, A.G.'s Office

RE: Criminal Allegations Regarding ATC/Sprague Energy Site

DATE: October 14, 1994

This is simply to make you aware that the SBI is looking into allegations by a citizen in the Wilmington area that environmental crimes were committed by one or more of the operators of the above-referenced site. I know that the Superfund Section has some involvement with the site, and I understand that EPA has placed it in the non-time critical removal category.

I spoke on the phone the other day with the complainant, which led to the local D.A., the A.G.'s Environmental Crimes Task Force and the SBI following up. The SBI's research will be the first (and possibly last) step. I've also made Richard Whisnant, who has apparently had some contact with a person considering buying the property, aware of the situation. It is impossible to know at this point whether anything will come of the criminal investigation.

c: Mike Kelly  
Pat DeRosa  
Richard Whisnant  
Phil Telfer



State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



October 14, 1994

Mr. Michael E. Slemp  
Marketing Environmental Engineer  
EXXON Company, U.S.A.  
Suite 200  
Charlotte, NC 28217

RE: Old Mount Holly Road PCE Site Inspection Report *file*  
NCD 986 172 518  
Request for Removal of Tank B

Dear Mr. Slemp:

Enclosed is a copy of the Site Inspection Report on the Old Mount Holly Road PCE Site. Copies of references are not included. You should already have most of these references in your records. If you need to see the NC Superfund copy of these references, you may call (704) 733-2801 and make an appointment with Scott Ross.

Also enclosed is a copy of the request for removal of Tank B made by NC Superfund to US EPA Region IV.

Should you have any questions, please call me at (919) 733-2801.

Sincerely,

Jeanette Stanley,  
Environmental Chemist

Enclosures

cc: Mr. and Mrs. Neil Casltes (with attachments)  
Paw Creek Environmental Health and Safety Committee - (with attachments)  
Scott Ross - NC Superfund Section (letter only)  
Debbie Crane - NC DEHNR Public Affairs Office (letter only)  
Pat DeRosa - NC Superfund Section (letter only)  
Pat Williamson - Division of Solid Waste (letter only)

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



October 14, 1994

Mr. Bobby Cloninger  
Paw Creek Environment, Health, and Safety Committee  
P. O. Box 571  
Charlotte, NC 28130

RE: Old Mount Holly Road PCE Site Inspection Report  
NCD 986 172 518  
Request for Removal of Tank B

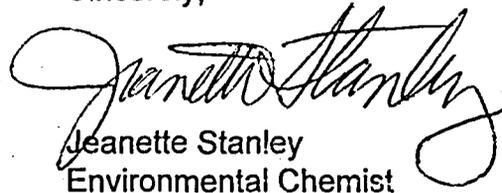
Dear Mr. Cloninger:

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Also enclosed is a copy of the request for removal of Tank B made by NC Superfund to US EPA Region IV.

Should you have any questions, please call me at (919) 733-2801.

Sincerely,

  
Jeanette Stanley  
Environmental Chemist

Enclosures

cc: Mike Slemp - Exxon (with attachments)  
Mr. and Mrs. Neil Castles (with attachments)  
Scott Ross - NC Superfund Section (letter only)  
Debbie Crane - NC DEHNR Public Affairs Office (letter only)  
Pat DeRosa - NC Superfund Section (letter only)  
Pat Williamson - Division of Solid Waste (letter only)

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

October 14, 1994

Mr. and Mrs. Neil Castles  
1525 Stoneyridge Dr.  
Charlotte, NC 28214

RE: Old Mount Holly Road PCE Site Inspection Report  
NCD 986 172 518  
Request for Removal of Tank B

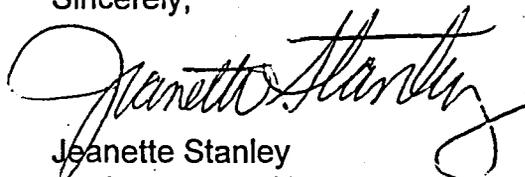
Dear Mr. and Mrs. Castles:

Enclosed is a copy of the Site Inspection Report on the Old Mount Holly Road PCE Site. Copies of references are not included. You should already have most of these references in your records. If you need to see the NC Superfund copy of these references, you may call (704) 733-2801 and make an appointment with Scott Ross.

Also enclosed is a copy of the request for removal of Tank B made by NC Superfund to US EPA Region IV.

Should you have any questions, please call me at (919) 733-2801.

Sincerely,

  
Jeanette Stanley  
Environmental Chemist

Enclosures

cc: Mike Slemp - Exxon (with attachments)  
Paw Creek Environmental Health and Safety Committee (with attachments)  
Scott Ross - NC Superfund Section (letter only)  
Debbie Crane - NC DEHNR Public Affairs Office (letter only)  
Pat DeRosa - NC Superfund Section (letter only)  
Pat Williamson - Division of Solid Waste (letter only)

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

October 10, 1994

Mr. Myron D. Lair, Chief  
Emergency Response and Removal Branch  
U.S. EPA Region IV  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

Subj: Immediate Removal Evaluation  
Old Mount Holly Road PCE Site  
Charlotte, Mecklenburg County, NC

Ref: Letter. Myron D. Lair, U.S. EPA-ERRB, to Mike Kelly, NC DSWM.  
Exxon Distribution Terminal, Charlotte, NC, October 29, 1993.

Dear Mr. Lair:

The NC Superfund Section requests that the U.S. EPA Emergency Response and Removal Branch (ERRB) evaluate the Old Mount Holly Road PCE Site in Charlotte, NC, for a possible removal action. The basis for this removal action evaluation request is new information presented in the Site Inspection (SI) submitted to Cynthia Gurley of the Site Assessment Section 30 September 1994. The center of investigative findings is the Castles Auto and Truck Service (Castles) facility. This facility was built by Exxon in 1955 and operated as a tanker truck servicing center until it was leased to Charlotte Truck Service in 1975 and then sold to Castles in 1981.

The ERRB has responded to a number of contaminated wells in the area including the Stogner well across the street from the suspected contaminant source at the Castles facility. Also, Mr. Don Rigger of ERRB reviewed the file information on the Castles Property in June of 1993 when this new data was not yet available. After his review, we received notice in October 1993 (see referenced letter) that this site did not meet eligibility requirements for removal because of the "nature of the waste and storage in USTs" (implying the NCPs petroleum exclusion). Because we now have sampling data indicating that tetrachloroethylene (PCE) was in these tanks at one time, the site may now meet eligibility requirements. We discussed this with Mr. Rigger and he indicated that it would be worth a look at the new data. Hence, we have provided a brief summary of the pertinent SI findings below and ask that your staff contact Cindy Gurley of Site Assessment for a copy of the entire SI.

The SI has confirmed the presence of PCE in the sludge of the oil/water separator and in the soil immediately downgradient of Tank B. In addition, a shallow monitoring well downgradient of

Mr. Lair  
10-10-94  
Page 2

Tank B is contaminated with PCE. The NC Superfund Section is concerned that Tank B, the oil/water separator, and the surrounding soils are continuing to be sources of groundwater contamination. Appropriate excerpts from the SI, including sampling data and sampling locations, are attached. Note that soil downgradient of Tank B contains up to 137,868 ug/Kg PCE. Oil/Water separator sludge contains 658 ug/Kg PCE (a previous investigation showed 2,200 ug/Kg). This sampling data demonstrates that PCE has been stored and released from the Castles facility at some point (during current and/or previous ownership). This information may be useful to you in PRP determinations for previous ERRB actions in the area. Also, because of these findings, we request that consideration be given to a tank and soil removal operation at the Castles facility as a source control measure.

In addition to problems at the Castles facility itself, we are aware that there are 8 or more drinking water wells within 0.5 miles of the site that are contaminated with PCE. All of these wells had PCE levels at or below 2 ug/liter. However, considerable time has elapsed since they have been sampled. There are also approximately 100 PCE-contaminated wells within 4 miles; several above 5 ug/liter.

State funds for this removal action are not available at this time. Please let us know if and when a field evaluation of this site can be conducted so we may coordinate your site visit with our staff. If you or your staff have any questions concerning this site, please contact Pat DeRosa or me at (919)733-2801.

Sincerely,



Jack Butler, PE  
Head, Remediation Branch

bin\let\omhrr

attachment

cc: Mike Kelly, DSWM  
Pat DeRosa, DSWM  
Pat Williamson, DSWM  
Cindy Gurley, EPA Region IV  
Rob Krebs, DEM-Mooresville

↑  
Also copies for  
Jeanette Stanley

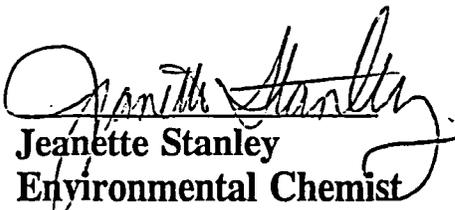
# SITE INSPECTION REPORT

Old Mount Holly Road PCE Site  
NCD 986 172 518  
Charlotte, Mecklenburg County, North Carolina

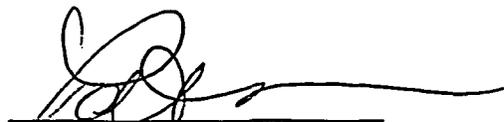
September 1994

Superfund Section  
Division of Solid Waste Management  
North Carolina Department of Environment, Health  
and Natural Resources

Prepared by:

  
Jeanette Stanley  
Environmental Chemist

Reviewed by:

  
Pat DeRosa  
CERCLA Branch Head

## EXECUTIVE SUMMARY

The enclosed report contains the findings of the Site Inspection of the Old Mount Holly Road PCE Site, located in the Paw Creek area of Charlotte, Mecklenburg County, North Carolina. The site was originally identified as a private drinking water well located at the Stogner residence, 7911 Old Mount Holly Road, which was found to be contaminated with tetrachloroethene, also known as perchloroethene or PCE. The source of the PCE contamination was unknown. Two additional wells located nearest to the Stogner well were also found to be contaminated with PCE and PCE degradation products. The Exxon Paw Creek fuel distribution terminal and the Castles Auto and Truck Service facility are located directly across the road and upgradient of these wells. A 1991 study identified PCE in soil and groundwater at the Castles property. Since the Castles property was originally owned and operated by Exxon and the two facilities are believed to be linked by underground piping, the two facilities were investigated jointly for this Site Inspection.

Two petroleum pipelines intersect in the Paw Creek area and there are a number of petroleum tank farms within one mile of the site. Petroleum contamination of groundwater is a problem in the area. The citizenry has formed the Paw Creek Health and Safety Committee to oversee environmental activities.

In response to a gasoline spill on the Exxon property, Mecklenburg County Department of Environmental Protection (MCDEP) sampled 89 drinking water wells in the Paw Creek area in April 1990. PCE contamination of the Stogner well was discovered at that time and the residence was connected to city water. To date, approximately 400 area drinking water wells have been tested and about 100 PCE-contaminated wells have been found. Eight of these are within 1/2 mile of the Old Mount Holly Road PCE Site.

In 1993, MCDEP and the North Carolina Division of Environmental Management (NC DEM) sampled surface water in numerous streams and outfalls in the Paw Creek area. One sample point in an unnamed tributary to Long Creek was determined to contain low levels of PCE in several sampling events. This sampling point was downstream of drainage from the Exxon, Shell and Marathon bulk storage terminal outfalls. PCE was not detected in any of the 16 outfalls from the petroleum companies. PCE was not detected in Paw Creek which receives overland flow from the Castles property.

The Castles facility was built around 1955 by Exxon. Exxon used the facility for servicing tanker trucks until it leased the property to Charlotte Truck Service in 1975. Exxon sold the property to Mr. Castles in 1981. Mr. Castles operated an auto painting and repair shop on the property until it closed in 1989. Repeated efforts to locate a septic tank serving the Castles property have been unsuccessful and numerous underground conduits are known to exist between the Castles and Exxon properties.

The NC Superfund Section conducted the SI sampling on the Exxon and Castles properties in 1993 to confirm the previous soil results, look for other possible sources on the Exxon or Castles property, and to determine the source of PCE contamination in the stream.

The NC Superfund Section confirmed that there is PCE and its degradation products, plus 4-methyl-2-pentanone, fluorene, anthracene, and phenanthrene in subsurface soil around underground storage tank (UST) B (Tank B) on the Castles property. PCE concentrations increased with increasing depth of sample. Chlorinated solvents (including PCE and its

degradation products), 4-methyl-2-pentanone, zinc and numerous semivolatile organic compounds were detected in the sludge in the oil/water separator on the Castles property. PCE, isomers of dichloroethene (DCE), trichloroethene (TCE), 4-methyl-2-pentanone, styrene, fluorene, phenanthrene, anthracene, chromium, copper, and zinc were detected in the two monitor wells closest to these areas.

Soil in the culvert on the east of the Castles property which receives surface drainage from the Castles property and the road contains numerous contaminants, but PCE was not detected.

Other than CERCLA-exempt petroleum products, subsurface soil on the Exxon property contained 4-methyl-2-pentanone (typically used as a paint solvent), styrene (typically found in petroleum refining wastes), and chromium. PCE was not detected in subsurface soil samples taken on the Exxon property, even in stained soil located in the area of an old oil/water separator. PCE was detected at a low level in the bedrock monitoring well closest to the Castles facility. No semivolatiles were detected in the groundwater; however, cadmium, copper, lead, chromium, and zinc were detected in the groundwater on the Exxon terminal facility.

PCE was not detected in surface water samples taken in the stream receiving the Exxon outfall. All four of the NC Superfund Section stream-sampling points were upstream of the point where PCE was detected by MCDEP and NC DEM. 4-Methyl-2-pentanone was detected in the surface water at the Exxon outfall but not further downstream. Numerous semivolatile organic compounds commonly found in coal tar and waste oils were detected in the stream sediments at all four sampling points. Indeno(1,2,3-cd)pyrene was detected in the oil/water separator on the Castles property and at a significant level at the probable point of entry of Exxon drainage to surface water. The old asphalt plant that emptied into the same stream likely contributed to this contaminated sediment. Lead was detected in stream water at the Exxon outfall and at a significant level in the sediments in the wetland.

It appears that the PCE-contaminated soil around UST B may be responsible for the contamination of the three wells closest to the Castles property and the other eight PCE-contaminated wells within 1/2 mile of the site. It is not certain if any of the other PCE-contaminated wells within two miles of this site are due to the PCE contamination on the Castles property.

A source for the PCE contamination previously detected in the unnamed tributary to Long Creek approximately 2,000' below the Exxon outfall has not yet been determined. Other possible sources are groundwater-to-surface water discharge or a downstream source.

Based on these findings, it is recommended that the site receive further action under CERCLA. Removal of contaminated soils around Tank B and the oil/water separator on the Castles' property is recommended to reduce continued migration of PCE to groundwater. Additional soil sampling in these areas may be required to support data quality objectives if an Expanded Site Inspection is required. Additional groundwater data is expected to be generated as a result of upcoming well installation and sampling events planned by petroleum companies in the Paw Creek area. This data may also help locate any PCE plumes and determine whether contaminated groundwater is discharging to surface water.

Ceramic Design  
 280 ppb PCE - 1992  
 58 ppb TCE

Castles Auto

PPE1

KOCH Asphalt

Kenan Transport

Exxon Terminal WTs

Old Mount Holly Road PCE Site

Restaurant  
 32 ppb PCE - 1990  
 4.7 ppb TCE

Davenport well  
 1,565 ppb PCE - 1993  
 17 ppb TCE  
 10 ppb 1,2-DCE  
 8 ppb 1,1-DCE

Paw Creek

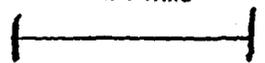
Bill's Transmission  
 (former drycleaners)

Stogner Well  
 2,033 ppb PCE - 1990  
 450 ppb TCE  
 199 ppb 1,2-DCE



PCE-contaminated wells above 200 ppb

1/4 mile



g. No: 2

Title:

Site Location Map

North Carolina  
 Division of Solid  
 Waste Management

Scale: As Shown

Date: March 1994

Drawn By: *Stanley*

Perfund Section

Site Name: Old Mount Holly Road PCE Site

NCD 986 172 518

A file review of other CERCLIS sites within 4 miles of the Old Mount Holly Road PCE Site has shown that one site, Central Transport (NCD 046 148 540), 1 1/2 miles to the east did have PCE in its onsite lagoon. A cleanup and groundwater study is being conducted under the NC Hazardous Waste Section (Fig. 3; Refs. 3; 20). A 1985 investigation of Union Carbide Battery (NCD 980 844 336), 2 1/4 miles to the east of the site (formerly known as State Ports Authority), found 50 ppb PCE in a ditch draining the property (Fig. 1; Refs. 3; 74). Martin Marietta-Sodyedo (a National Priorities List (NPL) site NCD 001 810 365), lies 3 1/2 miles to the west of this site. Several chlorinated hydrocarbons have been detected in the groundwater, including low levels of PCE, but the hydrogeology is well defined and the plume is migrating away from the Old Mount Holly Road PCE site and toward the river (Refs. 3; 19).

### 2.3 Operational History and Waste Characteristics

Wastestreams generated by the Exxon facility include: soil and absorbants (D018), hazardous waste solids (D001, D018), waste combustible liquid (D018) and waste paint-related material (D001, F003, F005). A record of tank cleaning waste disposal by Exxon from 1991 to 1993 shows the removal of 162,671 gallons plus 10 tons of sludge, 39,642 gallons of treated waste and 147 tons of filter cake (Ref. 15, Exhibit L). All wastes were disposed off site. Wastestreams D001 and D018 formerly shipped offsite are now treated onsite (Ref. 9, p.63).

A 1992 manifest shows a shipment of waste paint-related material (D001, F003, F005) to Enesco, Inc. in El Dorado, AR. In September 1988, tanks were cleaned out resulting in 49 drums of D001 waste, which was shipped offsite (Ref. 9, p.69). Waste paint was removed from two tanks in December 1988. This paint was found to contain lead and chromium above RCRA standards. This waste was shipped offsite in February 1989 (Ref. 9, p.69). Waste sludge was shipped to Martin Marietta on I-77 North (Charlotte) in 1983 (Ref. 9, pp.72-73). As estimated 4,000 gallons of sludge, water, and gasoline were shipped to Mitchell Systems in Spruce Pine, NC in 1983 (Ref. 9, p.74). The preceding tank cleaning event apparently occurred in 1980 (Ref. 9, p.75). Several areas of stained soil on the Exxon property indicate that tank bottoms were disposed of onsite at one time (Ref. 22, p.2). A report that a battery reconditioning operation occurred in the steel building on site has not been confirmed (Ref. 28, p.4; Fig. 10).

The Castles facility (Figs. 2; 3) was constructed in the 1950's by Exxon (Ref. 15). It was used as a maintenance facility for 25 - 30 of Exxon's terminal fuel transport trucks until 1975 (Refs. 13; 17). The structure was then rented to Mr. W. W. Dunlap of Charlotte Truck Service (Ref. 13). Mr. Dunlap indicated that he operated a wrecker service out of the building and that no major mechanical work was performed on the property (Ref. 13). Mr. Castles has reported that Dunlap painted tanker trucks for Hess on this property. He said that there was a layer of paint under the outside vent when he purchased the property. Mr. Castles also reported that there was a complete machine shop in the building when he purchased it (Ref. 28, p.5).

Exxon sold the property to Mr. and Mrs. Neil Castles in 1981 (Refs. 13; 17; 21, pp.9-12). Mr. Castles operated an auto and truck painting operation at the site until 1989 (Refs. 13; 14, p.1). Waste paint and lacquer thinner were recycled and used as automobile undercoating. No commercial engine repairs or parts cleaning was performed by Mr. Castles; however, Mr. Castles' personal vehicles were serviced onsite. Waste oil generated from this maintenance was drummed and used by Ruble Concrete Company to line forms (Ref. 13, p.2; 28, p.4).

A site layout map of the Castles' facility is shown in Figure 5. Information provided by Exxon (Ref. 15, Exhibit A) and previous investigations of the Castles property (Refs. 9; 15, Exhibit H; 17; 21, p.9; #30, pp.59) report that there were four underground storage tanks (USTs) and an oil/water separator on the Castles portion of the site.

UST A (capacity 4,500 gallons, Ref. 9, p.37), installed to a depth of approximately 10 feet (Ref. 30, p.9) contained varsol which was used for gauging tanker trucks. Mr. Castles never used the tank and discovered its presence when he was cleaning some broken asphalt in the area (Ref. 9, p.92; 28, p.3). NC DEM has declared that Exxon was the owner of the tank (Ref. 9, p.50). UST A was removed on May 24, 1994 (Ref. 77).

UST B was reportedly a waste oil tank with a capacity of 500-1500 gallon (Refs. 13; 17; 30, pp.11,28). This tank was installed at a depth of approximately seven feet (Ref. 30, p.10). Mr. Castles has stated that he was unaware of the presence of UST B until he had a fence repaired around 1986 (Ref. 28; 35, p.4). He then used the tank for waste oil (Ref. 30, p.11). High levels of PCE (up to 95,000 ppb) have previously been detected in the soil around this tank (Ref. 30, p.46 and Appendix A).

UST C, owned by Exxon (Ref. 9, pp.50,92), was a diesel tank buried at a depth of 7 - 8 feet (Ref. 30, p.10). This tank was removed in May 1991 (Refs. 9, p.41; 26). It was not a registered tank and an official closure document was not required for this removal (Ref. 35, p.2). UST C has been reported as having capacity of 500 gal, but dimensions taken of the tank during the May 1991 removal indicated that it was a 1,500 gal tank. Mrs. Castles has stated that Exxon representatives hammered on the tank for three days after removal (Ref. 28, p.3).

UST D (capacity 500 gallons) contained heating oil for the frame home north of the Castles garage (Ref. 30, p.12). This tank is still in place (Ref. 35, p.7).

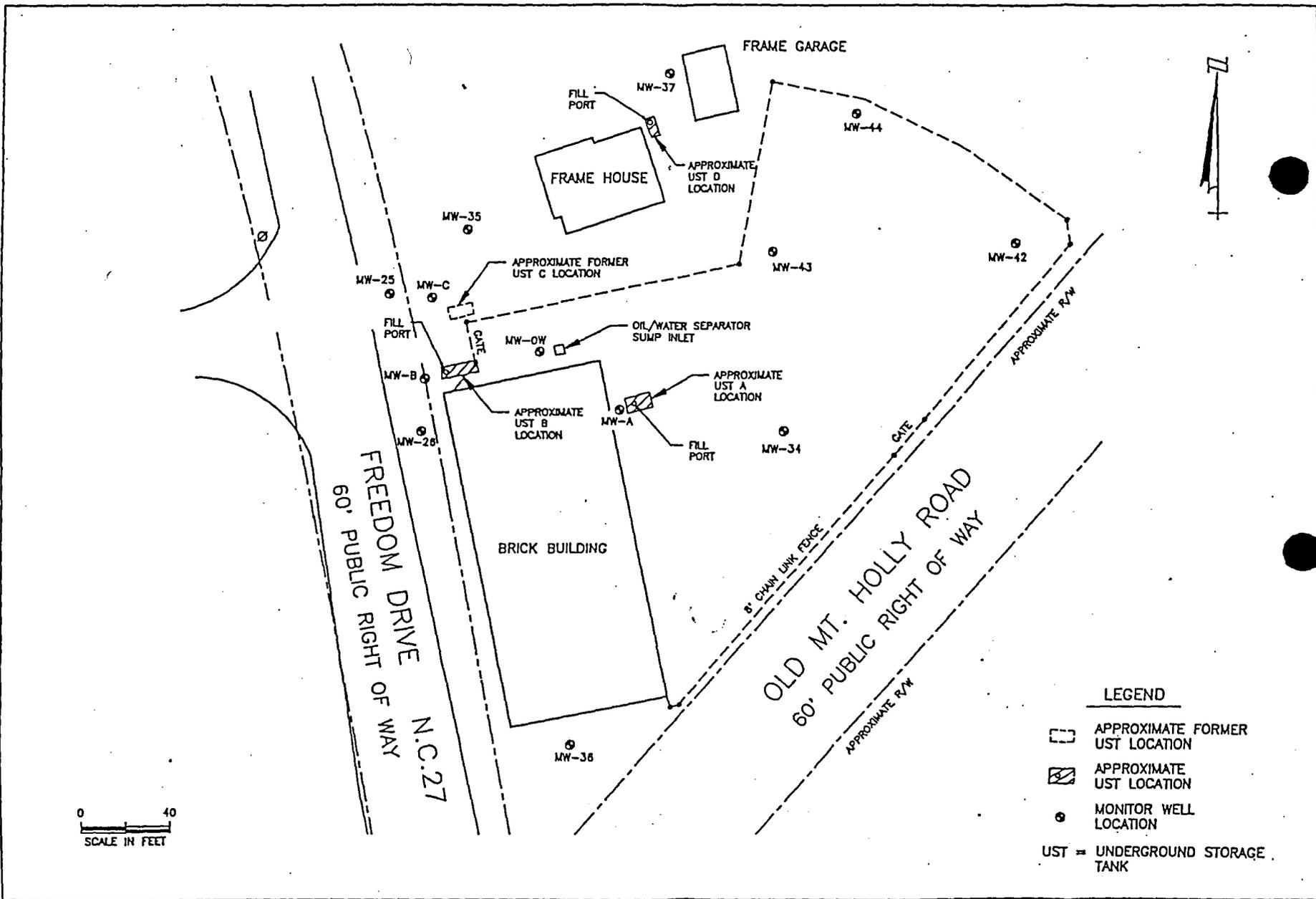
The oil/water separator has the dimensions of 2' x 3' x 4' (Ref. 23, p.20). The oil/water separator was used to catch wash water from the vehicle wash area above the separator and possibly from other operations from within the building (Ref. 17). Typically, the oil floats to the top and is pumped off. The rest of the water is discharged into a septic tank, sewer, or stream. A deposition of Mrs. Castles indicates that waste solvents were poured into a floor drain during The Castles' use of the building. She said these were not chlorinated solvents. She said that the drain leads to the oil-water separator (Ref. 21).

The Castles facility has never been connected to city sewer services (Ref. 35) nor have any of the investigative teams that visited the site been able to locate a septic tank (Refs. 15, p.12; 35) A 1955 blueprint of the original maintenance facility constructed for Exxon indicates a sand filter located on the southern portion of the Castles property (Ref. 15, Exhibit A). It is not known if the sand filter shown in the drawing was ever installed. The NC Superfund Section did not find it during the SI in November and December 1993 (Ref. 23, pp.20-21).

PORTION OF PROPERTY OF  
CASTLES AUTO AND TRUCK SERVICE, INC.  
CHARLOTTE, NORTH CAROLINA

FIGURE 5  
SITE PLAN

ERM  
ERM-SOUTHEAST, INC  
CHARLOTTE, NC



Soil borings around all four USTs and the oil/water separator on the Castles property were also taken during this 1991 investigation (Ref. 30,pp.14-15; Figs. 6; 7). Samples were analyzed for TPH, volatile and semivolatile organic compounds and methanol. In addition, the soil samples collected from borings around USTs A and B were tested for oil and grease.

The sample results are shown in Tables 2 - 6. Samples showing PCE and its degradation products are shown in Figures 6 and 7. A soil sample located near UST B at Castles' Auto and Truck Service indicated levels up to 95,000 ppb PCE. The highest level was in the 7-9 foot depth range at sampling location B1 (Figs. 5; 7; Ref.30,pp.46,171). A soil boring in the vicinity of the oil/water separator showed elevated levels of PCE (Figs. 5;6; Ref.30,p.25). TCE, DCE, xylenes, naphthalene, phenanthrene, 2-methylnaphthalene, fluorene, dibenzofuran, and bis (2-ethylhexyl)phthalate were also detected in the soil samples on the Castle's site (Ref. 30,pp.1-57 ).

In August 1993, NC DEM sampled surface soil in three locations on the Exxon property in response to a July 22, 1993 discharge of gasoline to the surface soil (Ref. 9,pp.12-13). Sample locations S-1, S-2, and S-3 are shown on Figure 8. These samples were analyzed for volatiles (including PCE) and semivolatiles. The only positively identified contaminant detected was 2,100 ug/kg 1,2,4-trimethylbenzene, a constituent of gasoline (Ref. 64,p.49) in sample S-2. Several other organic compounds were detected in these samples but the laboratory did not identify them because they were not on the target compound list (Ref. 27,pp.1-14).

### 3.2 Site Inspection: Source Sample Locations and Analytical Results

On November 30 and December 1, 1993 the NC Superfund Section conducted a Site Inspection to verify potential sources of PCE contamination on the Castles and Exxon properties. Samples of surface soil, subsurface soil, monitor wells, surface water and sediment were collected (Ref. 23). No tank samples were collected. The NC Superfund Section did not sample the contents of Tank B, because sampling performed by an Exxon consultant in 1991 (Ref. 30,pp.12,72-75) did not indicate the presence of PCE in the tank. A list of the source samples along with an explanation of their location is given in Table 7 and shown in Figures 9 and 10. The analytical results of soil/source samples are summarized below in Tables 8 -10.

Split samples were collected and provided to Exxon for all samples on the Exxon Terminal property. Mrs. Castles accepted split samples of all three soil samples collected around Tank B (volatile only) and samples from two monitor wells (OM-M26-MW and OM-MWB-MW). She was offered and accepted one split sample from the Exxon property (OM-J01-SL). Exxon was offered and accepted one split sample from the Castles property (OM-TC2-SL) (Ref. 23; 81). The NC Superfund Section samples were submitted to the NC Division of Laboratory Services, Environmental Sciences Section on December 3, 1993, and were analyzed for target compound list (TCL) volatile and semivolatile organics and inorganic compounds as indicated in Appendix A (Figs. 1;9;10; Appendix A).

Results of the volatiles analyses are included in Appendix A and summarized in Table 8. The background surface soil sample (OM-E01-SL) contained 54 ppb toluene, a trace of ethylbenzene and 10 ppb xylenes with no methylene chloride or acetone detected. The duplicate background surface soil sample showed a low level of methylene chloride (10 ppb) (a common laboratory contaminant) and acetone (which the laboratory was unable to quantitate).

Some of the volatiles detected on site are components of fuels (as indicated in Table 8) or are not listed CERCLA hazardous substances (Refs. 64; 40 CFR Parts 300.5; 302.4). Due to the large number of petroleum facilities in the area and the fact that fuels are exempt from CERCLA (40 CFR Part 300.5), these contaminants were not used in evaluating waste characteristics of this site.

Table 7. Old Mount Holly Road PCE Site Soil/Source Samples, NC Superfund Section, 1993

Sample No.	Matrix, depth	Analyses	Rationale	Description
OM-E02-SL	SOIL 8'	VOA BNA Metals	Subsurface soil background	Location E2, approximately 3' west of MW-42
OM-C03-SL	SOIL 6.5'	VOA only	Soil below area of removed Tank C, high reading on OVA meter during augering	In area of sample C-3 in 1991 ERM Report. 10' east of utility pole
OM-C03-SL	SOIL 8'	VOA BNA Metals	Soil below area of removed Tank C	In area of sample C-3 in 1991 ERM Report. 10' east of utility pole
OM-B04-SL	SOIL 8'	VOA BNA Metals	Soil around Tank B	In area of sample B-4 in 1991 ERM Report. 4'N of NW corner of bldg, 4'S of fill port on Tank B
OM-B1a-SL	SOIL 8'	VOA BNA Metals	Soil around Tank B	In area of sample B-1 in 1991 ERM Report. Between Tank B and north side of building
OM-B1b-SL	SOIL 10'	VOA BNA Metals	Soil around Tank B	In area of sample B-1 in 1991 ERM Report. Between Tank B and north side of building.
OM-TC2-SL	SOIL 6'	VOA BNA Metals	Soil in area of reported Terra Cotta Pipe	Location TC2, approximately 14' west of outside wall of building, 15'N of southwest corner of building
OM-SF1-SL	SOIL 6.5'	VOA BNA Metals	Soil in area of reported Sand Filter Bed	Location SF1, approximately 42' south of southwestern corner of building and 9' east of wall
OM-E01-SL	SOIL 2" below Surface	VOA BNA Metals	Background	Upgradient of site, in ditch alongside road

Table 7 (Cont.)

Sample No.	Matrix, depth	Analyses	Rationale	Description
OM-E01-SLD	SOIL 2" below Surface	VOA BNA Metals	QA/QC duplicate	Upgradient of site, in ditch alongside road
OM-CUL-SL	SOIL surface	VOA BNA Metals	Soil in area of culvert drainage from Castles property	Location CUL, east of culvert at corner of Freedom Drive and Old Mount Holly Road
OM-002-CN	Sludge	VOA BNA Metals	Contents of Oil/water separator	Contents of Oil/water separator on Castles property, north of building
OM-F01-SL	SOIL 8'	VOA BNA Metals	Soil in area of old oil/water separator	Location F, 4' NE of utility pole on Exxon property
OM-G01-SD	Sludge	VOA BNA Metals	Concrete box on Exxon property receiving surface water discharge, just prior to discharge to stream	Location G, where NPDES compliance samples are taken
OM-H01-SL	SOIL 8'	VOA BNA Metals	Soil in area between suspected area of PCE contamination (contaminated soil around Tank B and high level of PCE in shallow monitoring well, MW-B) and shallow monitoring well on Exxon property showing lower level of PCE (MW-13)	Location H, about 8' S of vapor recovery unit
OM-I01-SL	SOIL 4'	VOA BNA Metals	in general area of MW-13	Location I, in general area of MW-13 where PCE was previously detected
OM-J01-SL	SOIL 8'	VOA BNA Metals	Sludge pit area 2	Location J--10' N gauge on Tank 2

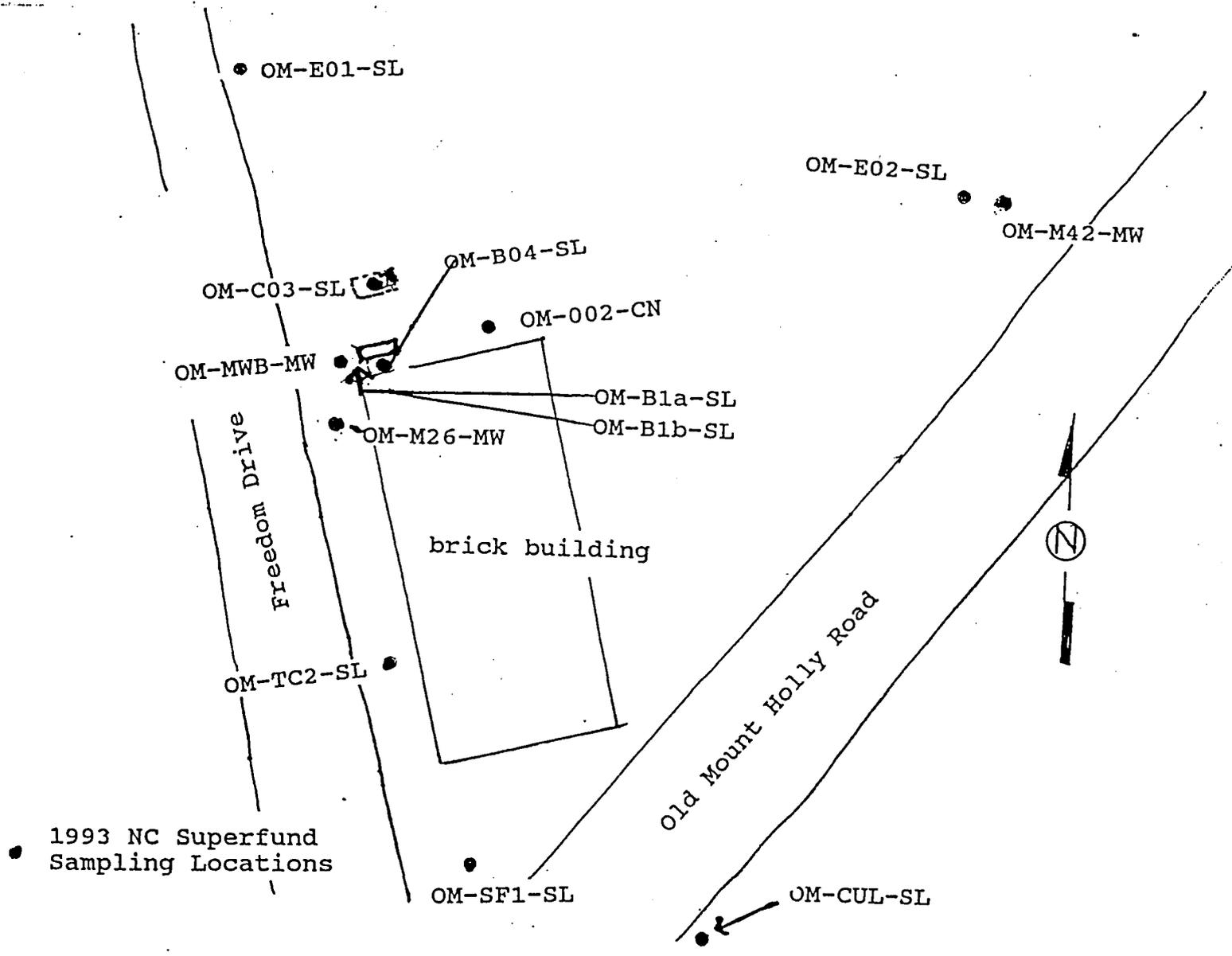


Fig. No: 9	Title: 1993 NC Superfund Sampling Locations - Castles Property		
North Carolina Division of Solid Waste Management	Scale: Not to Scale	Date: March 1994	Drawn By: <i>Stanley</i>
Superfund Section	Site Name: Old Mount Holly Road PCE Site		NCD 986 172 518

Table 8. Volatile Organics, Sources/Soils, NC Superfund Section, 1993

Sample location/ compound (ppb)**	OM-E01-SL	OM-E01-SLD	OM-C03-SL (6.5')#	OM-C03-SL (8')	OM-B04-SL	OM-B1a-SL	OM-B1b-SL##	OM-SF1-SL	OM-002-CN	OM-I01-SL#	OM-J01-SL##
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	3,432	ND	ND
Acetone	ND	+	+	+	ND	+	+	+	+	+	+
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	10	ND	ND
Methylene Chloride	ND	10C	ND	ND	ND	ND	ND	ND	ND	5J,C	
Carbon Disulfide	ND	ND	3J	ND	ND	ND	ND	ND	2J	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	8	ND	ND
2-Butanone	ND	ND	ND	ND	ND	ND	ND	5J	5J	5J	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	55	37	4,207	ND	477	ND	ND
Benzene***	ND	ND	9	17	2J	2J	165	ND	trace	ND	2J
Trichloroethene	ND	ND	ND	ND	338	1,005	6,438	10*	118	ND	ND
4-Methyl-2-pentanone	ND	ND	1,208*	ND	398	ND	ND	10J	548*	97*	15,874*
Toluene***	54	ND	363	22	82	91	ND	ND	1,952	36	25,236
2-Hexanone	ND	ND	500*	ND	2,747	ND	ND	ND	369*	31*	2,616*
Tetrachloroethene	ND	ND	ND	ND	21,330	47,938	137,868	ND	658	ND	
Ethyl Benzene***	trace	ND	1,008	368	191	641	1,146	ND	169	147	24,448
Xylenes***	10	ND	3,474	2,749	399	11,829	37,451	ND	1,063	2,042	131,423
Styrene***	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,862
Methyl-t-butyl ether***	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	182*

\*Tentative identification J - estimated value K - actual value is known to be less than value given C = Common laboratory contaminant

\*\*micrograms/kilogram ND = Not detected Bold = Significant level of CERCLA hazardous substance

\*\*\*Petroleum constituent

#Diluted due to high concentration, Method detection limit 10 x normal

##Diluted due to high concentration, Method detection limit 100 x normal

+ Acetone was detected in these samples, but quantitation was not possible due to an unknown interference. Since one of the surface soil samples was shown to contain acetone and the duplicate did not show acetone, there appears to be an aberration in acetone results for this sampling event and its presence should be disregarded.

Table 9. Semivolatile Organics, Sources/Soils, NC Superfund Section, 1993

Sample location/ compound (ppb, ug/kg)*	OM-E01-SL	OM-E01-SLD	OM-C03-SL	OM-B04-SL	OM-B1a-SL	OM-B1b-SL	OM-CUL-SL	OM-002-CN	OM-101-SL	OM-J01-SL
Napthalene**	ND	ND	21,667	833	26,667	31,667	ND	330K	333	58,333
Fluorene	ND	ND	7,333	8,333	16,333	36,667	ND	437	ND	ND
Phenanthrene	ND	330K	11,000	4,500	7,667	6,667	330K	589	ND	ND
Anthracene	ND	330K	7,667	3,000	2,000	3,333	330K	330K	ND	ND
Fluoranthene (benzo(j,k) fluorene)	ND	867	ND	ND	ND	ND	13,667	5,782	ND	ND
Pyrene	ND	633	ND	ND	ND	ND	4,433	2,313	ND	ND
Benz(a) anthracene	ND	3,133	ND	ND	ND	ND	113,933	11,833	ND	ND
Chrysene	ND	3,500	ND	ND	ND	ND	85,400	17,363	ND	ND
Benzo(b) fluoranthene (3,4-benzo fluoranthene)	ND	7,200	ND	ND	ND	ND	105,833	32,523	ND	ND
Benzo(a) pyrene	ND	7,567	ND	ND	ND	ND	152,667	35,329	ND	ND
Indeno(1,2,3-cd)pyrene	ND	4,667	ND	ND	ND	ND	ND	96,792	ND	ND
Dibenzo(a,h) anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i) perylene	ND	2,567	ND	ND	ND	ND	332,583	117,414	ND	ND
2-Methyl naphthalene**	ND	ND	46,000	7,000	242,000	443,333	ND	1,028	633	72,667

\*micrograms/kilogram

K - actual value is known to be less than value given

\*\*Petroleum constituent

Bold = Significant level of CERCLA hazardous substance

ND=Not Detected

### 3.4 Conclusions

Most source samples contained petroleum fuel constituents which were not used to evaluate the site. The following source samples contained significant quantities of the listed CERCLA hazardous substances:

- The subsurface soil in the area of Tank B contained:  
PCE and its degradation products,  
4-methyl-2-pentanone,  
fluorene,  
phenanthrene and  
anthracene.
- The soil under former Tank C contained:  
4-methyl-2-pentanone,  
fluorene,  
phenanthrene and  
anthracene
- The oil/water separator on the Castles property contained;  
PCE and its degradation products,  
4-methyl-2-pentanone,  
fluorene,  
fluoranthene,  
pyrene,  
benz(a)anthracene,  
chrysene,  
benzo(b)fluoranthene,  
benzo(a)pyrene,  
indeno(1,2,3-cd)pyrene,  
benzo(g,h,i)perylene and  
zinc.
- The culvert receiving overland drainage from the Castles facility and several area petroleum facilities contained:  
fluoranthene,  
pyrene,  
benz(a)anthracene,  
chrysene,  
benzo(b)fluoranthene,  
benzo(a)pyrene and  
benzo(g,h,i)perylene.
- On the Exxon terminal property, subsurface soil in the vicinity of the vapor recovery unit contained chromium.
- Subsurface soil in the vicinity of MW- 13 on the Exxon property contained chromium and 4-methyl-2-pentanone.
- Subsurface soil in the area north of Tank 2 on the Exxon property contained styrene and 4-methyl-2-pentanone.



Fig. No: 4

North Carolina Division  
of Solid Waste Management  
  
Superfund Section

Title: PCE-Contaminated Drinking Water Wells within  
2 miles of the site

Scale: As Shown

Date: December 1993

Drawn By: *[Signature]*

Site Name: Old Mount Holly Road PCE Site

NCD 986 172 518

KEY to Figure 4 Of Old Mount Holly Road PCE Site SI  
(assume 1 ppb PCE contamination if nothing listed)

- 1 Naomi Stogner 7911 Old Mount Holly Road
- 2 Tree House Lounge (Paw Creek Station, restaurant)
- 3 Ceramic Design 7929 Old Mount Holly Road
- 4 Mary Miller 8120 Metts Road
- 5 Anna Sheril 527 Carole Lane
- 6 Mr. Buff 532 Carole Lane
- 7 Alisa Mullis 712 Little Road Road
- 8 Sam Williams 707 Little Road Road - PCE 3ppb
- 9 Linda Reams 6416 Hoover Circle
- 10 Beatrice Davenport - see table, very high
- 11 Leola Shaw 6514 Elmwood Circle PCE - 4ppb, TCE - 1 ppb
- 12 Ellavieve Lawson 6800 Elmwood Circle PCE - 4ppb
- 13 George Picket 6012 Elmwood Circle - 5 ppb PCE
- 14 Gary Green 5852 Freedom Dr. 6 ppb PCE
- 15 Betty Killman 200 Lee Dr. 5 ppb PCE
- 16 Clyde Peak 108 Chanticleer Ct. 8 ppb PCE
- 17 Margaret Shaw 215 Hansard Dr. 7 ppb PCE
- 18 Tim Suggs 201 Lee St.
- 19 R.O. Price 221 Fielding
- 20 William McClanahan 212 Hansard Dr. 6 ppb PCE
- 21 Pat Miles 207 Lee St.
- 22 Gosey 5956 Elmwood Dircle
- 23 Stikeleather 714 Mack St.
- 24 Auten 2105 Tom Sadler Rd.
- 25 Brigman 1722 Marita Dr.
- 26 White 100 Lee Dr.
- 27 Gaddy 8827 Mount Holly Road
- 28 Abernathy - 634 Gumbranch
- 29 Davis 1101 Walden Rd.
- 30 Hord 1830 Gumbranch
- 31 Stogner 1840 Marita 2 ppb PCE
- 32 Bennett 1526 Summerville Rd.
- 33 Abercrombie 115 Kensett
- 34 Tucker 2013 Tom Sadler Rd.
- 35 Fisher 8200 Mount Holly Road
- 36 Lee 1812 Marita Rd.
- 37 Starnes 120 Lee Dr.
- 40 White 1201 Gumbranch
- 41 Ferguson 1033 Lundy Lane
- 42 Sides 336 Fielding
- 43 Hickok 1516 Niagara - 3 ppb PCE
- 44 Sapp 122 Hansard
- 45 Barrett 1133 Regeher
- 46 Troutman 6304 Sullins Rd.
- 47 Wingate 711 Wingate Dr.
- 48 Albert 5937 Elmwood Circle
- 49 Plemmons Laburn Ave 2 ppb PCE
- 50 Robbins 5410 Pinebrook
- 51 Emory 611 Carole Ln.
- 52 Wagner 9109 Mount Holld Road

53 Ritter 123 Roxanna Ct.  
54 Plummer 6000 Elmwood Circle 2 ppb PCE  
55 Furr 1115 Walden Rd. 2 ppb PCE  
56 Marion 452 Kimmswich  
57 Craig 207 Hansard  
58 Hoare 220 Hansard 2 ppb PCE  
59 Callander 6607 Elmwood  
60 Chapman 1715 Woodlea Rd.  
61 Lee 217 Hansard Dr.  
62 Davis 1334 Walden  
63 Lawing 1200 Little Road Rd.  
64 Spangler 9000 Mount Holly Road  
65 Laney 523 Belmorrow Dr.  
66 Messimer 149 Kensett  
67 Murphy 6117 Old Mount Holly Road  
68 Cox 114 Kinderway  
69 Beatty 9301 Moores Chapel Road  
70 Broome 1632 Woodlea  
71 Longshore 9228 Mount Holly Road  
72 Eaker 8813 Mount Holly Road  
73 Lewis 132 Hansard  
74 Parson 305 Fielding  
75 Derrick 810 Toam Sadler Rd.  
76 Seagal 5948 Elmwood  
77 Bell 7138 Mount Holly Road  
78 Oats 11316 Gumbranch  
79 Midgett 6237 Freedom Dr.  
80 Foxx 1400 Niagara  
81 Woodard 1440 Niagara  
82 Blackwood 1418 Niagara  
83 Stack 109 Lee Dr.  
84 Tesenairs 6020 Elmwood  
85 Smith 1800 Marita  
86 Helms 1010 Little Rock Rd,  
87 Daugherty 8232 Westborne Dr.  
88 Gary 1415 Niagara  
89 Bennett 1622 Valleydale  
90 Armstrong 174 Mellwood  
91 Williams 1731 Woodlea  
92 Warren 2205 Tom Sadler Rd.  
93 Warren 2223 Tom Sadler Rd.  
94 Saunders 1725 Marita  
95 Reid 118 Howard Cir.  
96 Dimmer 7206 Mack St.  
97 Clary 6229 Elmwood Cir.  
98 Lutz 1720 Woodlea  
99 Freeman 310 Glenhaven  
100 Graybeal 1636 Ravenswood Rd.  
101 Calebro 1201 Walden  
102 Sheely 5701 Paw Creek Rd.  
103 Furr 1118 Walden Rd.  
104 Guy 6417 Elmwood Dr.  
105 Hall 1410 Niagara  
106 Gillenwater 335 Fielding Rd.  
107 Kiker 118 Kiker Cir.  
108 Ashe 1234 Kiker Cir.  
109 Goodman 6400 Elmwood Cir.

*Kim Clarke - file - Old Mt. Holly Rd. PCE file*

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

June 28, 1994

Mr. and Mrs. Neil Castles  
1525 Stoneyridge Dr.  
Charlotte, NC 28214

RE: Sampling Results from  
under Tank A

Dear Mr. and Mrs. Castles:

On May 23, 1994, I visited your property during the removal of Tank A. While there, I gave sample bottles to Paul Dahlen, NC DEM Mooresville Regional Office, who was monitoring the removal of Tank A. He took samples of soil after the removal of Tank A on May 24, 1994. These samples were shipped to me and were analyzed for volatile and semivolatile organic compounds.

Laboratory results from volatile and semivolatile analyses are enclosed. Should you have any questions, please call me at (919) 733-2801.

Sincerely,

Jeanette Stanley  
Environmental Chemist

Enclosures

cc: Mike Slemp - Exxon (with attachments)  
Paw Creek Environmental Health and Safety Committee (with attachments)  
Kim Clarke - NC Superfund Section (with attachments)  
Debbie Crane - NC DEHNR Public Affairs Office (letter only)  
Pat DeRosa - NC Superfund Section (letter only)





0.5g purged multiply MDL's by 10

①

STATE LABORATORY OF PUBLIC HEALTH  
PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

PURGEABLE COMPOUNDS	LAB NO	941711					
	FIELD NO	15806					
COMPOUND	TYPE	( 3 )	( )	( )	( )	( )	( )
	UNITS	pg/l (pg/kg)	pg/l pg/kg				
CHLOROMETHANE	20ppb	u					
VINYL CHLORIDE	10						
BROMOMETHANE	20						
CHLOROETHANE	10						
TRICHLOROFLUOROMETHANE	10						
ACETONE	50						
1,1-DICHLOROETHENE	5						
IODOMETHANE	10						
METHYLENE CHLORIDE	5						
CARBON DISULFIDE	↓						
TRANS-1,2-DICHLOROETHENE	↓						
H ACRYLONITRILE	200						
1,1-DICHLOROETHANE	5						
2-BUTANONE	50						
CIS-1,2-DICHLOROETHENE	5						
CHLOROFORM	↓						
1,1,1-TRICHLOROETHANE	↓						
CARBON TETRACHLORIDE	10						
BENZENE	5						
1,2-DICHLOROETHANE	↓						
TRICHLOROETHENE	↓						
1,2-DICHLOROPROPANE	↓						
BROMODICHLOROMETHANE	10	✓					
	↑ MDL ↑						

B - Background present in lab blanks.  
 J - Estimated value  
 K - Actual value is known to be less than value given.  
 L - Actual value is known to be greater than value given.  
 U - Material was analyzed for but not detected. The number is the Minimum Detection Limit.  
 NA - Not analyzed.  
 1/ - Tentative identification.  
 2/ - On NRDC List of Priority Pollutants.  
 H - Compound reliably detectable only at high concentrations.  
 C - Possible lab contamination.  
 DEHNR 3065-0 (10/93)

STATE LABORATORY OF PUBLIC HEALTH  
 PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

PURGEABLE COMPOUNDS	LAB NO	941711					
	FIELD NO	15806					
COMPOUND	TYPE	(3)	( )	( )	( )	( )	( )
	UNITS	pg/l (pg/kg)	pg/l pg/kg				
DIBROMOMETHANE	5 ppb	u					
4-METHYL-2-PENTANONE	50						
CIS-1,3-DICHLOROPROPENE	5						
TOLUENE	↓						
TRANS-1,3-DICHLOROPROPENE	↓						
1,1,2,2-TETRACHLOROETHANE	10						
1,1,2-TRICHLOROETHANE	5						
2-HEXANONE	50						
TETRACHLOROETHENE	5						
DIBROMOCHLOROMETHANE	10						
ETHYLENE DIBROMIDE	5						
CHLOROBENZENE	↓						
1,1,1,2-TETRACHLOROETHANE	10	↓					
ETHYL BENZENE	5	47 J					
XYLENES	10	u					
STYRENE	5						
BROMOFORM	10						
TRANS-1,4-DICHLORO-2-BUTENE	80						
1,2,3-TRICHLOROPROPANE	200						
1,4-DICHLOROBENZENE	10						
1,2-DICHLOROBENZENE	↓						
1,2-DIBROMO-3-CHLOROPROPANE	200						
VINYL ACETATE	↓	↓					
Hydrocarbons	⊕/⊖	⊕					
Substituted benzenes	⊕/⊖	⊕					
	↑MDL↑						

H  
H  
H  
H

B - BACKGROUND PRESENT IN LAB BLANKS.  
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 NA - Not analyzed.  
 1/ - Tentative identification.  
 2/ - On NRDC List of Priority Pollutants.  
 H - COMPOUND RELIABLY DETECTABLE ONLY AT HIGH CONCENTRATIONS.  
 C - POSSIBLE LAB CONTAMINATION.  
 DEHNR 3088-O (10/93)

STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO									
	FIELD #									
COMPOUND	TYPE	( )	( )	( )	( )	( )	( )	( )	( )	
	UNITS	<del>µg</del> µg/kg	µg/l	µg/kg	µg/l	µg/kg	µg/l	µg/kg	µg/l	µg/kg
N-nitrosodimethylamine	10/330	U								
bis(2-chloroethyl)ether										
2-chlorophenol										
phenol										
1,3-dichlorobenzene										
1,4-dichlorobenzene										
1,2-dichlorobenzene										
bis(2-chloroisopropyl)ether										
hexachloroethane										
N-nitroso-di-n-propylamine										
nitrobenzene										
isophorone										
2-nitrophenol										
2,4-dimethylphenol										
bis(2-chloroethoxy)methane										
2,4-dichlorophenol										
1,2,4-trichlorobenzene										
naphthalene		28,333								
hexachlorobutadiene		U								
4-chloro-m-cresol										
hexachlorocyclopentadiene										
2,4,6-trichlorophenol										
2-chloronaphthalene										
acenaphthylene										
dimethyl phthalate										
2,6-dinitrotoluene										
acenaphthene										
2,4-dinitrophenol	50/1650									
2,4-dinitrotoluene	10/330									
4-nitrophenol	50/1650									
fluorene	10/330	7,000								
4-chlorophenylphenylether		U								
diethyl phthalate										
4,6-dinitro-o-cresol	50/1650									
diphenylamine	10/330									
azobenzene										
4-bromophenylphenylether										
hexachlorobenzene										
pentachlorophenol	50/1650									
phenanthrene	10/330	2,667								
anthracene		U								
dibutyl phthalate										
fluoranthene										

MDL  
H<sub>2</sub>O/SOIL

- J - Estimated value.
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STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	941712					
	FIELD #	15807					
COMPOUND	TYPE	(3)	( )	( )	( )	( )	( )
	UNITS	<del>µg/l</del> (µg/kg) 330K	µg/l µg/kg				
pyrene	10/330	330K					
benzidine	50/1650	U					
butyl benzyl phthalate	10/330						
benz(a)anthracene	↓						
chrysene	↓						
3,3-dichlorobenzidine	50/1650						
bis(2-ethylhexyl)phthalate	10/330						
di-n-octyl phthalate	10/330						
benzo(b)fluoranthene	50/1650						
benzo(k)fluoranthene	↓						
benzo(a)pyrene	↓						
indeno(1,2,3-cd)pyrene	↓						
dibenzo(a,h)anthracene	↓						
benzo(q,h,i)perylene	↓	✓					
aniline	50/1650	U					
benzoic acid	↓						
benzyl alcohol	↓						
4-chloroaniline	↓						
dibenzofuran	10/330	✓					
2-methylnaphthalene	↓	126,333					
2-methylphenol	↓	U					
4-methylphenol	↓						
2-nitroaniline	50/1650						
3-nitroaniline	↓						
4-nitroaniline	↓						
2,4,5-trichlorophenol	↓	✓					
HYDROCARBONS (SIMILAR TO DIESEL FUEL)	F1-	(+)					

MDL  
H<sub>2</sub>O/SOIL

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- 2/ - On NRDC List of Priority Pollutants.

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



March 8, 1994

Mr. and Mrs. Neil Castles  
1525 Stonyridge Dr.  
Charlotte, NC 28214

RE: Sampling Results from  
1993 NC Superfund Sampling

Dear Mr. and Mrs. Castles:

On November 30 and December 1, 1993, staff from the NC Superfund Section sampled soil, monitoring wells, surface water, and sediment in the Paw Creek area of Charlotte, Mecklenburg County, North Carolina. These samples were taken on the Exxon terminal property, in the stream that receives the Exxon discharge, and on your property across Freedom Drive from the Exxon property. The samples were analyzed for volatile and semivolatile organic compounds and hazardous metals.

Laboratory results from metals in soils and sediments are enclosed. The maps and tables I sent to you with the organic results also explain these sample locations or depths. This is all of the analytical results from this sampling event. I can now begin preparing my Site Inspection Report of the Old Mount Holly Road PCE Site.

Should you have any questions, please call me at (919) 733-2801.

Sincerely,

Jeanette Stanley  
Environmental Chemist

Enclosures

cc: Mike Slemp - Exxon (with attachments)  
Paw Creek Environmental Health and Safety Committee (with attachments)  
Kim Clarke - NC Superfund Section (with attachments)  
Debbie Crane - NC DEHNR Public Affairs Office (letter only)  
Pat DeRosa - NC Superfund Section (letter only)

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



March 8, 1994

Mr. Bobby Cloninger  
Paw Creek Environment, Health, and Safety Committee  
P. O. Box 571  
Charlotte, NC 28130

RE: Sampling Results from  
1993 NC Superfund Sampling

Dear Mr. Cloninger:

On November 30 and December 1, 1993, staff from the NC Superfund Section sampled soil, monitoring wells, and surface water and sediment samples in the Paw Creek area of Charlotte, Mecklenburg County, North Carolina. These samples were taken on the Exxon terminal property, in the stream that receives the Exxon discharge, and on Mr. Neil Castles property across Freedom Drive from the Exxon property. The samples were analyzed for volatile and semivolatile organic compounds and hazardous metals.

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Environmental Chemist

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State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



March 8, 1994

Mr. Michael E. Slemp  
Marketing Environmental Engineer  
EXXON Company, U.S.A.  
Suite 200  
Charlotte, NC 28217

RE: Sampling Results from  
1993 NC Superfund Sampling

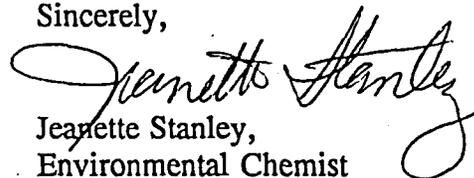
Dear Mr. Slemp:

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Should you have any questions, please call me at (919) 733-2801.

Sincerely,



Jeannette Stanley,  
Environmental Chemist

Enclosures

cc: Mr. and Mrs. Neil Castles (letter with attachments)  
Paw Creek Environmental Health and Safety Committee - (letter with attachments)  
Kim Clarke - NC Superfund Section (with attachments)  
Debbie Crane - NC DEHNR Public Affairs Office (letter only)  
Pat DeRosa - NC Superfund Section (letter only)

File: Old Mt Holly Road PCB file

# Study: No excess cancer near Paw Creek

The cancer rate among residents around a tank farm near Charlotte is not high, a study concludes.

The Associated Press

CHARLOTTE — Many residents who live near the Paw Creek fuel terminals believe the tank farm is killing them, but a new study indicates the area's cancer rate is comparable to the rest of the state.

"There is no excess cancer in the com-

munity of Paw Creek," Dr. Tim Aldrich, director of the state's Central Cancer Registry, said Thursday. "My hope is that this would send an encouraging message to the residents of Paw Creek."

The registry found 176 cases of cancer between 1987 and 1993 among Paw Creek residents living within a mile of the terminals, where at least 600,000 gallons of fuel have been leaked since 1960. Based on state cancer statistics, Aldrich expected to find 177 cases.

A spokesman for the oil companies hailed the results.

"Clearly, what I think is emerging here is that Paw Creek just looks like a safer community today after the release of this data," said Bill Weatherspoon of the N.C. Petroleum Council. "This is the kind of factual information that can help restore confidence among the citizens."

But Paw Creek residents weren't satisfied. They said they're ready to sue the 13 oil companies that have terminals at Paw Creek.

"We do believe the oil companies are the main cause of this pollution," said Bob Cloninger, a spokesman for the residents.

"They want something done."

Researchers would like to probe four leukemia cases that might be linked to benzene, a cancer-causing chemical that comes from gasoline vapor. A recent study of the air in the community northwest of Charlotte found levels of benzene high enough to pose a slightly increased risk of leukemia.

Aldrich's team expected to find one leukemia case within the benzene study area between 1988 and 1992. They found three. A fourth case occurred in that area earlier in the 1980s.

Those cases might not mean anything, he said. But UNC-Chapel Hill researchers have applied for a federal grant to study how much benzene Paw Creek residents actually inhale.

Cloninger said the survey substantiated community fears in part by identifying four leukemia cases. More study is needed, he said. The oil companies, meanwhile, are negotiating with state officials on a plan to assess, clean up and prevent future contamination there.

The state will continue to map cancers in the community for another five years.

- Superfund Section
- Hazardous Waste Section
- Solid Waste Section

**RECEIVED**  
 MAR 04 1994  
**SUPERFUND SECTION**

CHAIN OF CUSTODY RECORD

Project Name: <u>Old Mt. Holly Rd. PCE Site</u> Site ID # (NCD#) <u>986 1720 518</u> Location: <u>Charlotte, NC</u> Address: <u>Old Mt. Holly Rd.</u>	Sampled by: <u>J. Stanley</u> Sampler ID: _____ Telephone: <u>(919) 733-2801</u> Date Sampled: <u>11/30/93 - 12/1/93</u> Time Sampled: _____
--	--

Sample Types:    Soil     Water \_\_\_\_\_    Waste \_\_\_\_\_    Other \_\_\_\_\_

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Field Sample Numbers

<u>om-3</u>	<u>om-15</u>	<u>om-30</u>	<u>om-57</u>	<u>om-89</u>	_____	_____
<u>om-6</u>	<u>om-21</u>	<u>om-36</u>	<u>om-60</u>	<u>om-96</u>	_____	_____
<u>om-9</u>	<u>om-24</u>	<u>om-51</u>	<u>om-63</u>	<u>om-103</u>	_____	_____
<u>om-12</u>	<u>om-27</u>	<u>om-54</u>	<u>om-82</u>	<u>om-114</u>	_____	_____

Relinquished by: Jeanette Stanley (Signature)    Date: 12/6/93    Time: 10:10

Received by: Joyce Davis (Signature)    Date: 12/6/93    Time: 10:15

Relinquished by: \_\_\_\_\_ (Signature)    Date: \_\_\_\_\_    Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature)    Date: \_\_\_\_\_    Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ (Signature)    Date: \_\_\_\_\_    Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature)    Date: \_\_\_\_\_    Time: \_\_\_\_\_

Results Reported: W. Walker (Signature)    Date: 3/11/94    Time: \_\_\_\_\_









































State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

February 18, 1994



Mr. Bobby Cloninger,  
Paw Creek Environment, Health, and Safety Committee  
P. O. Box 571  
Charlotte, NC 28130

RE: Sampling Results from  
1993 NC Superfund Sampling

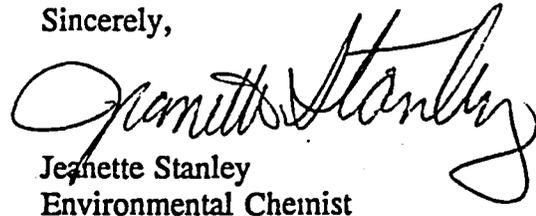
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Laboratory results from volatile and semivolatile analyses are enclosed. Also included are maps of sampling locations and a table explaining sample locations or depths. The results from the metals in water analyses were mailed last week. Results from metals in soil will be mailed as soon as they are available.

Should you have any questions, please call me at (919) 733-2801.

Sincerely,



Jeannette Stanley  
Environmental Chemist

Enclosures

cc: Mike Slemp - Exxon (with attachments)  
Mr. and Mrs. Neil Castles (with attachments)  
Kim Clarke - NC Superfund Section (with attachments)  
Debbie Crane - NC DEHNR Public Affairs Office (letter only)  
Pat DeRosa - NC Superfund Section (letter only)

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

February 18, 1994



Mr. and Mrs. Neil Castles  
1525 Stoneyridge Dr.  
Charlotte, NC 28214

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1993 NC Superfund Sampling

Dear Mr. and Mrs. Castles:

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Jeanette Stanley  
Environmental Chemist

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State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

February 18, 1994



Mr. Michael E. Slemp  
Marketing Environmental Engineer  
EXXON Company, U.S.A.  
Suite 200  
Charlotte, NC 28217

RE: Sampling Results from  
1993 NC Superfund Sampling

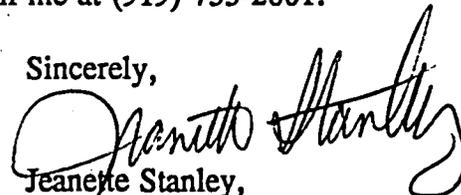
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Sincerely,



Jeanette Stanley,  
Environmental Chemist

Enclosures

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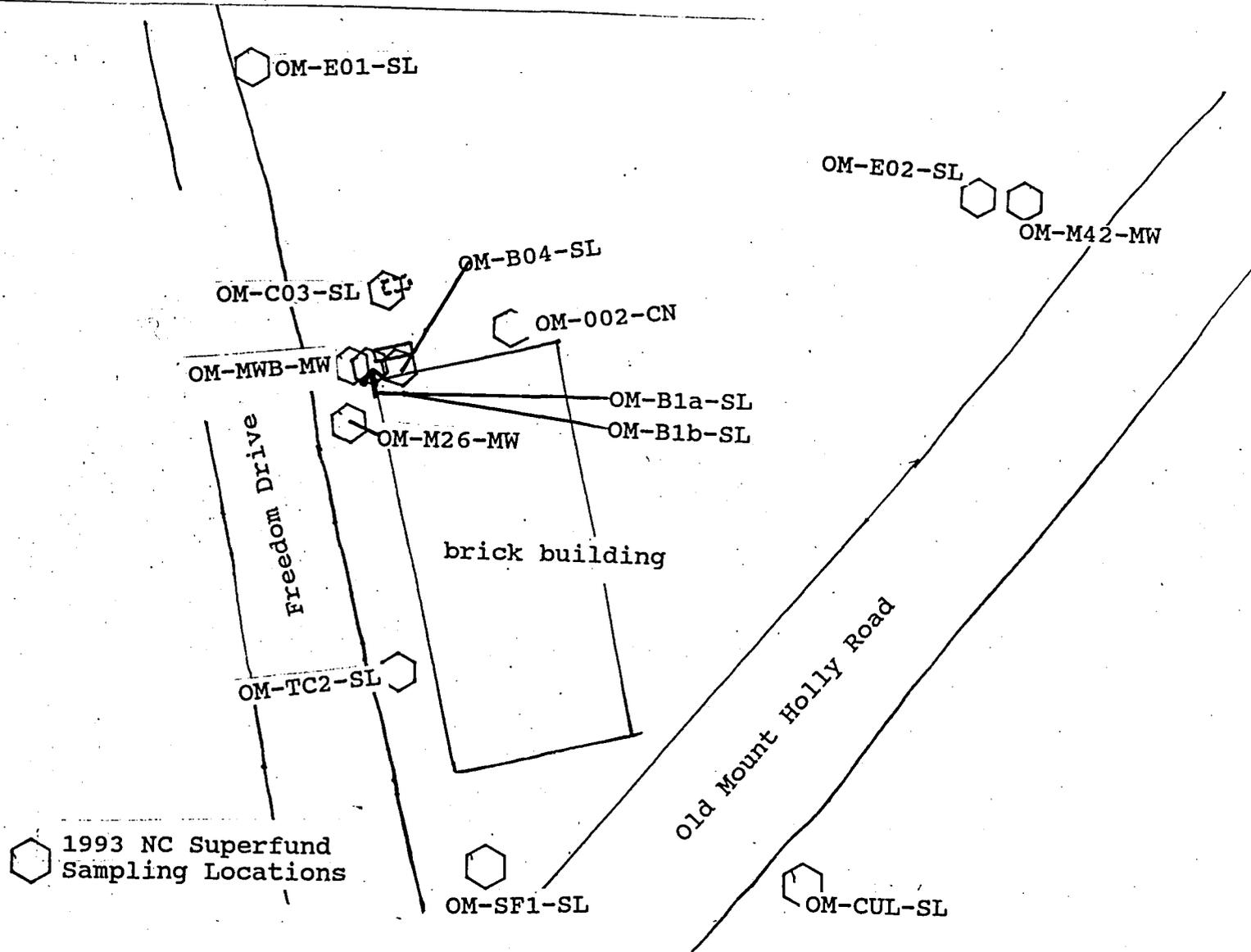


Fig. No:	Title: 1993 NC Superfund sampling locations		
	Scale: As Shown	Date:	Drawn By: <i>Stanley</i>
North Carolina Division of Solid Waste Management  Superfund Section	Site Name: Old Mount Holly Road PCE Site		NCD 986 172 518

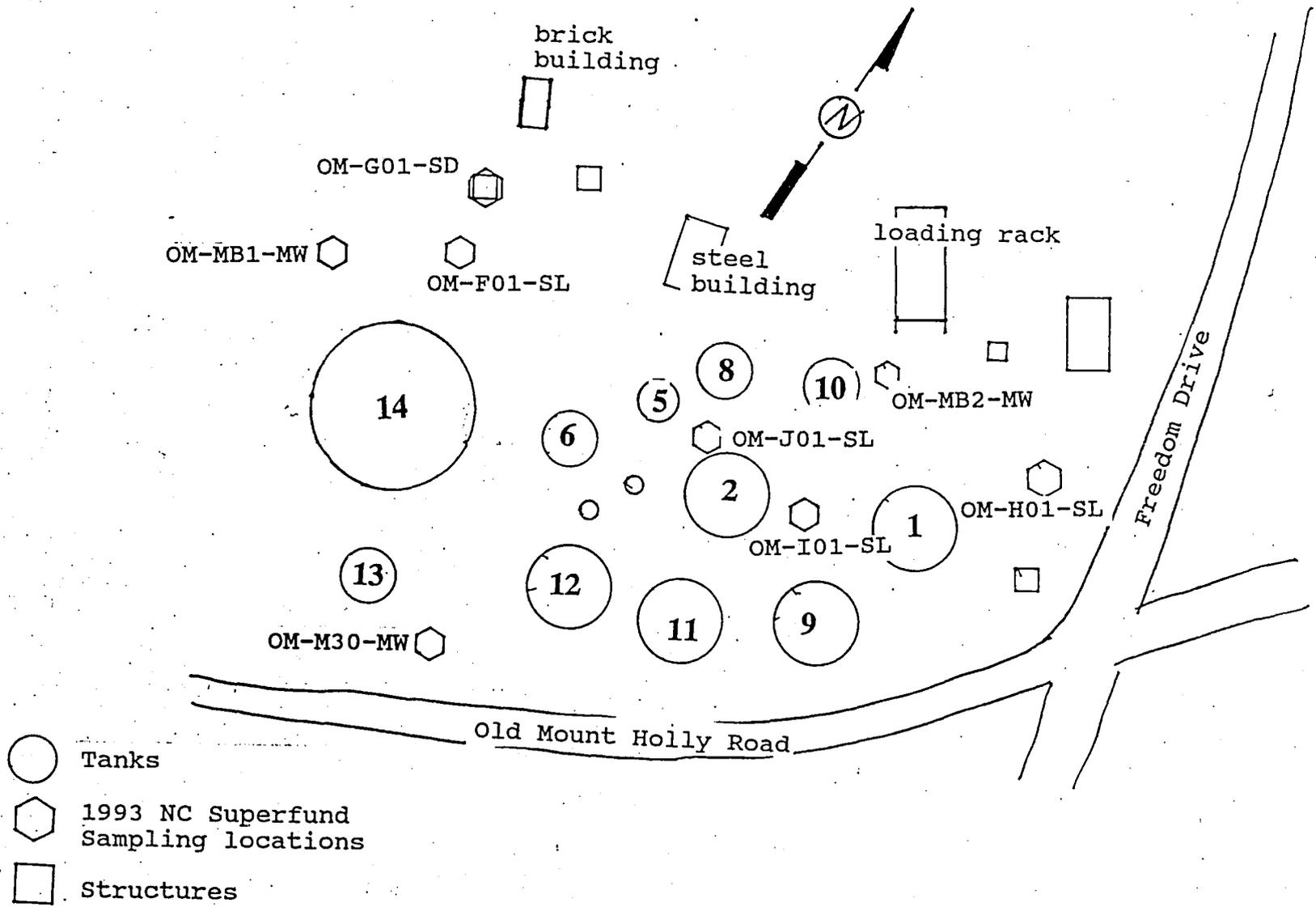


Fig. No:

North Carolina Division  
of Solid Waste Management

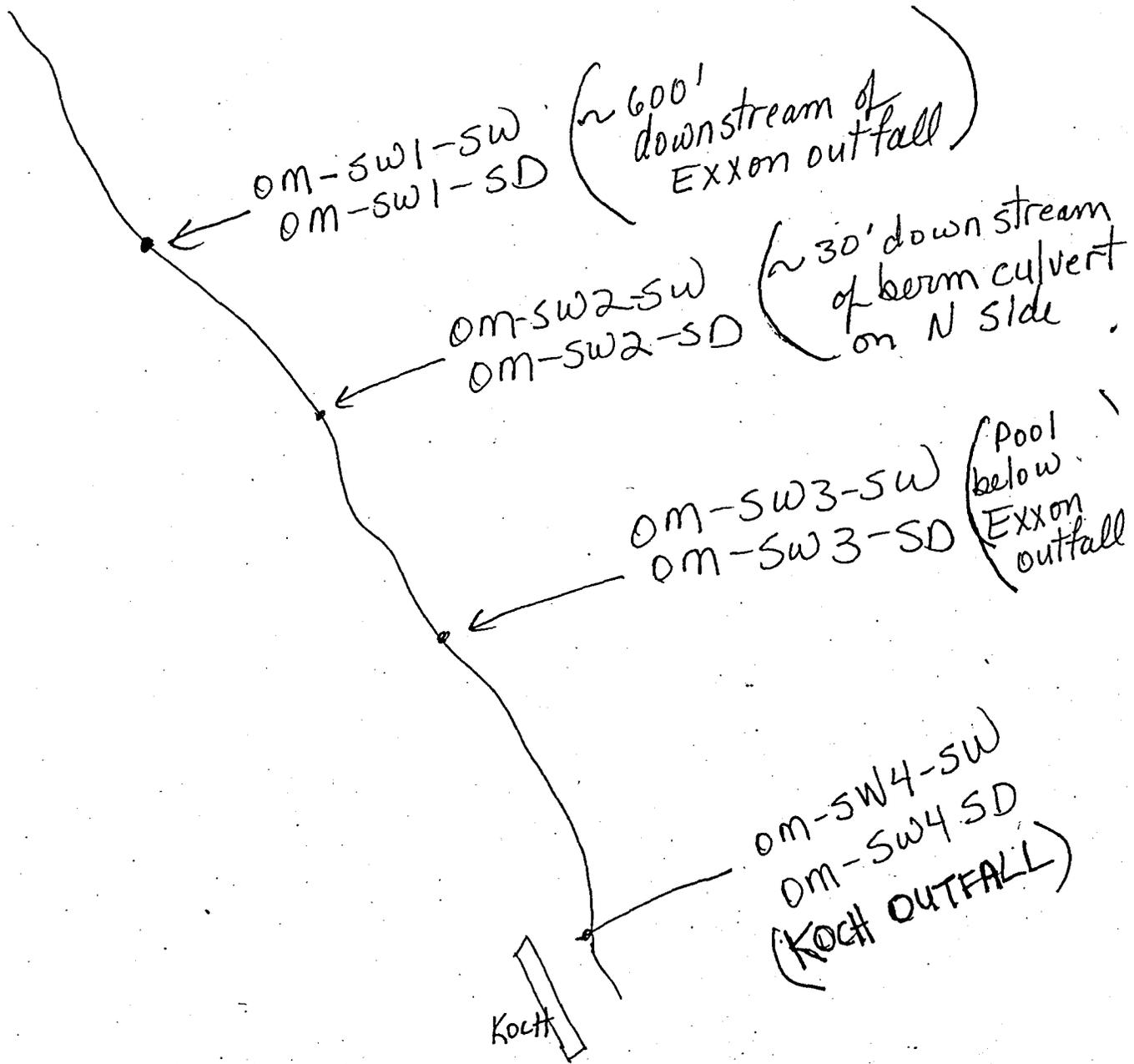
Superfund Section

Title: 1993 NC Superfund sampling locations

Scale: As Shown      Date:

Drawn By: *Stanley*

Site Name: *Old Mount Holly Road PCE Site*      NCD 986 172 518



NOT TO SCALE

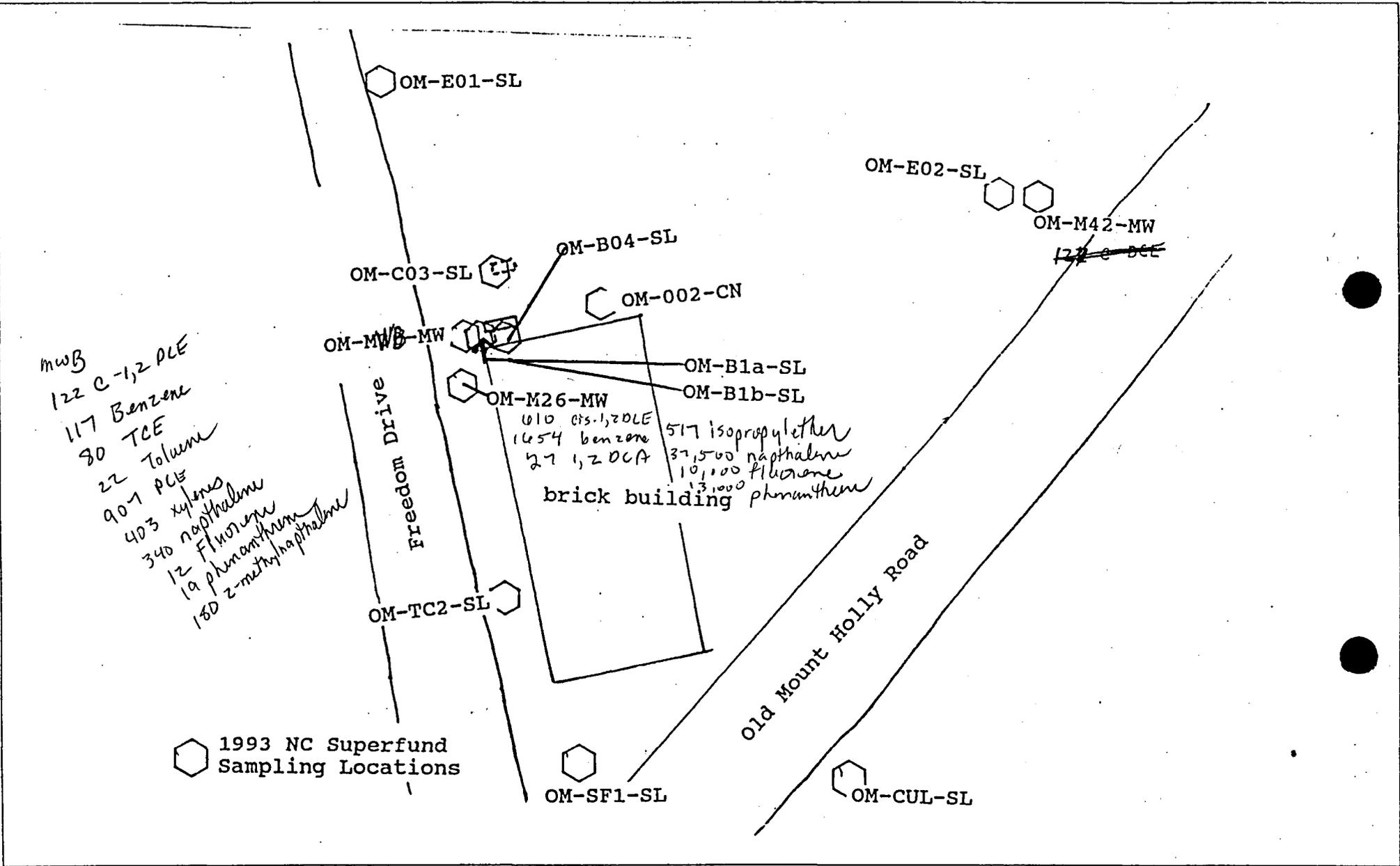


Fig. No:	Title: 1993 NC Superfund sampling locations		
North Carolina Division of Solid Waste Management  Superfund Section	Scale: As Shown	Date:	Drawn By: <i>Stanley</i>
	Site Name: Old Mount Holly Road PCE Site		NCD 986 172 518

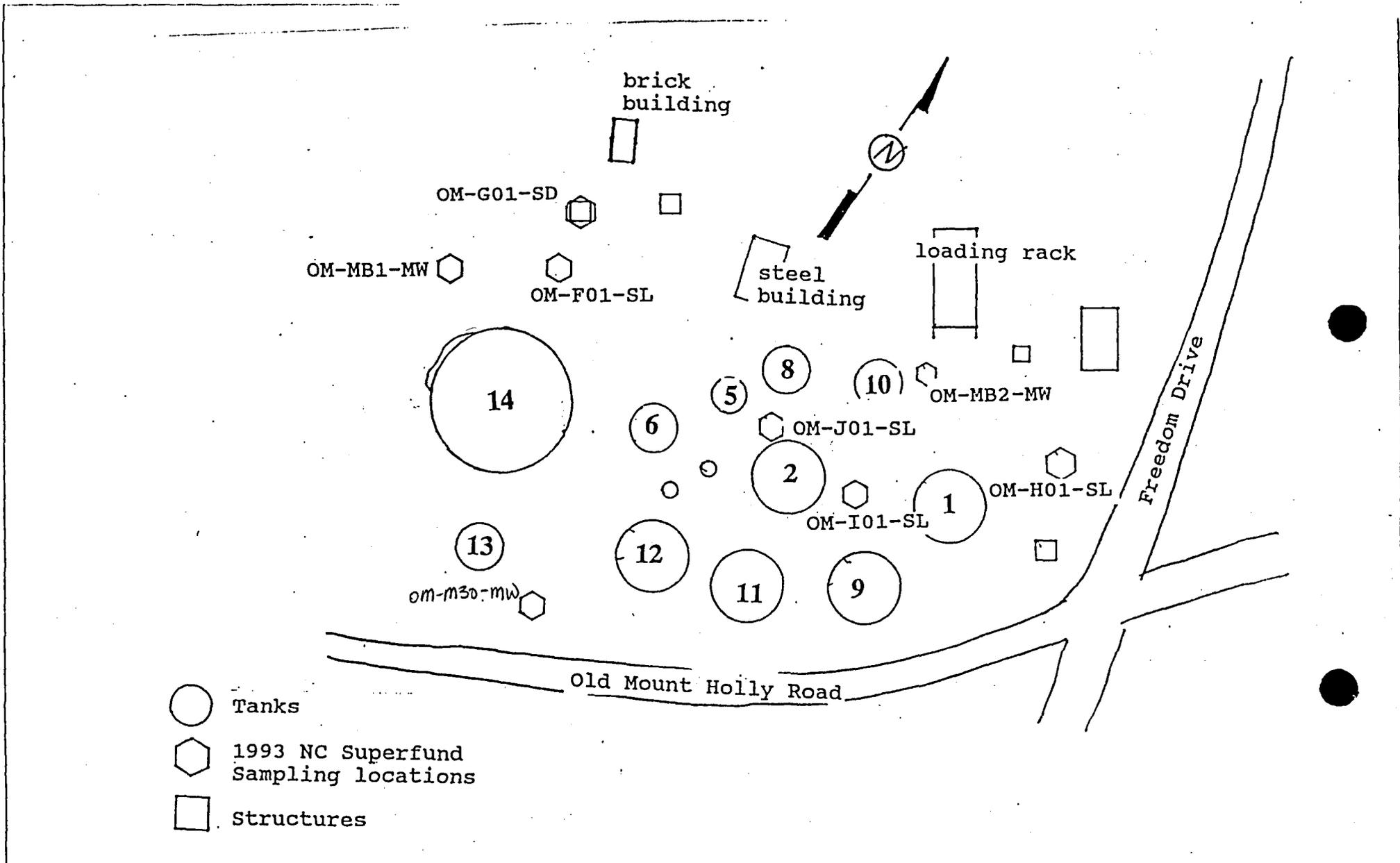


Fig. No:	Title: 1993 NC Superfund sampling locations		
North Carolina Division of Solid Waste Management Superfund Section	Scale: As Shown	Date:	Drawn By: <i>Stanley</i>
	Site Name: <i>Old Mount Holly Road PCE Site</i>		NCO 986 172 518





































































































































- Superfund Section
- Hazardous Waste Section
- Solid Waste Section

CHAIN OF CUSTODY RECORD

Project Name: <u>Old Mt. Holly Rd. PCE Site</u> Site ID # (NCD#) <u>NCD 980 172 518</u> Location: <u>Charlotte, NC</u> Address: <u>Old Mt. Holly Rd.</u>	Sampled by: <u>J. Stanley</u> Sampler ID: _____ Telephone: <u>(919) 733-2801</u> Date Sampled: <u>11/30/93-12/1/93</u> Time Sampled: _____
---	--

Sample Types: Soil  Water \_\_\_\_\_ Waste \_\_\_\_\_ Other \_\_\_\_\_

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Field Sample Numbers	<u>0m-1</u>	<u>0m-5</u>	<u>0m-10</u>	<u>0m-14</u>	<u>0m-22</u>	<u>0m-26</u>	<u>0m-49</u>
	<u>0m-2</u>	<u>0m-7</u>	<u>0m-11</u>	<u>0m-19</u>	<u>0m-23</u>	<u>0m-28</u>	<u>0m-50</u>
	<u>0m-4</u>	<u>0m-8</u>	<u>0m-13</u>	<u>0m-20</u>	<u>0m-25</u>	<u>0m-29</u>	<u>0m-52</u>
						<u>0m-34</u>	<u>0m-53</u>
						<u>0m-35</u>	

Relinquished by: Juanette Stanley (Signature) Date: 12/3/93 Time: 1615

Received by: John R. Neal (Signature) Date: 12/3/93 Time: 16:15

Relinquished by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Results Reported: John R. Neal (Signature) Date: 2/17/94 Time: \_\_\_\_\_  
#933915-933980

CHAIN OF CUSTODY RECORD

Project Name: <u>Old Mt. Holly Rd. PCE site</u> Site ID # (NCD#): <u>ncd 986 172 518</u> Location: <u>Charlotte, NC</u> Address: <u>Old Mt. Holly Rd.</u>	Sampled by: <u>J. Stanley</u> Sampler ID: _____ Telephone: <u>(919) 733-2801</u> Date Sampled: <u>11/30/93 - 12/1/93</u> Time Sampled: _____
--	--

Sample Types: Soil \_\_\_\_\_ Water  Waste \_\_\_\_\_ Other \_\_\_\_\_

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Field Sample Numbers	<u>om-37</u>	<u>om-39</u>	<u>om-41</u>	<u>om-43</u>	<u>om-45</u>	<u>om-47</u>	<u>om-68</u>	<u>om-70</u>	<u>om-72</u>	<u>om-74</u>	<u>om-76</u>	<u>om-78</u>	<u>om-83</u>	<u>om-85</u>	<u>om-90</u>	<u>om-92</u>	<u>om-97</u>	<u>om-99</u>	<u>om-104</u>	<u>om-106</u>	<u>om-119</u>	<u>om-124</u>	<u>om-126</u>	<u>om-128</u>	<u>om-130</u>
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Relinquished by: <u>Jeanette Stanley</u> (Signature)	Date: <u>12/3/93</u>	Time: <u>1615</u>
Received by: <u>John L. Neal</u> (Signature)	Date: <u>12/3/93</u>	Time: <u>1615</u>

Relinquished by: _____ (Signature)	Date: _____	Time: _____
Received by: _____ (Signature)	Date: _____	Time: _____

Relinquished by: _____ (Signature)	Date: _____	Time: _____
Received by: _____ (Signature)	Date: _____	Time: _____

Results Reported: <u>John L. Neal</u> (Signature) #933915-933980	Date: <u>2/17/94</u>	Time: _____
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- Superfund Section
- Hazardous Waste Section
- Solid Waste Section

CHAIN OF CUSTODY RECORD

Project Name: <u>Old Mt. Holly Rd. PCE site</u> Site ID # (NCD#): <u>NEP 986 172 515</u> Location: <u>Charlotte, NC</u> Address: <u>Old Mt. Holly Rd.</u>	Sampled by: <u>J. Stanley</u> Sampler ID: _____ Telephone: <u>(919) 733-2801</u> Date Sampled: <u>11/30/93 - 12/1/93</u> Time Sampled: _____
--	--

Sample Types: Soil  Water \_\_\_\_\_ Waste \_\_\_\_\_ Other \_\_\_\_\_

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Field Sample Numbers

<u>om-55</u>	<u>om-59</u>	<u>om-80</u>	<u>om-88</u>	<u>om-101</u>	<u>om-113</u>	_____
<u>om-56</u>	<u>om-61</u>	<u>om-81</u>	<u>om-94</u>	<u>om-102</u>	<u>om-132</u>	_____
<u>om-58</u>	<u>om-62</u>	<u>om-87</u>	<u>om-95</u>	<u>om-112</u>	_____	_____

Relinquished by: Jeanette Stanley (Signature) Date: 12/3/93 Time: 1615

Received by: John L. Neal (Signature) Date: 12/3/93 Time: 16:15

Relinquished by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Results Reported: John L. Neal (Signature) # 933915-933980 Date: 2/17/94 Time: \_\_\_\_\_

#933919 → had to dilute; MDL's @ 10

①

STATE LABORATORY OF PUBLIC HEALTH  
PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

m42      mWB      m26      mB1      mB2      SW1

PURGEABLE COMPOUNDS	LAB NO	933915	933917	933919	933921	933923	933925
	FIELD NO	OM-37	OM-41	OM-45	OM-68	OM-72	OM-76
COMPOUND	TYPE	(1)	(1)	(1)	(1)	(1)	(2)
	UNITS	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg
CHLOROMETHANE	20 ppb	u	u	u	u	u	u
VINYL CHLORIDE	10						
BROMOMETHANE	20						
CHLOROETHANE	10						
TRICHLOROFLUOROMETHANE	10		↓	↓			
ACETONE	20		⊕ <sup>I</sup>	⊕ <sup>I</sup>			
1,1-DICHLOROETHENE	5		u	u			
IODOMETHANE	10		↓				
METHYLENE CHLORIDE	5		↓				
CARBON DISULFIDE	↓		5J,K				
TRANS-1,2-DICHLOROETHENE	↓		u				
ACRYLONITRILE	200		↓				
1,1-DICHLOROETHANE	5		↓				
2-BUTANONE	20		↓	↓		↓	
CIS-1,2-DICHLOROETHENE	5		122	610		0.5 J	
CHLOROFORM	↓		trace	u		1 J	
1,1,1-TRICHLOROETHANE	↓		u	↓		u	
CARBON TETRACHLORIDE	10		↓	↓	↓	↓	↓
BENZENE	5		117	1654	19	0.7 J	trace <sup>u</sup>
1,2-DICHLOROETHANE	↓		u	27	11	18	3 J
TRICHLOROETHENE	↓		80	u	u	1 J	u
1,2-DICHLOROPROPANE	↓		u	↓	↓	u	↓
BROMODICHLOROMETHANE	10	↓	↓	↓	↓	trace	↓
Isopropyl ether	5	u	u	517	375	130	175

↑MDL↑

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- NA - Not analyzed.
- 1/ - Tentative identification.
- 2/ - On NRDC List of Priority Pollutants.
- H - COMPOUND RELIABLY DETECTABLE ONLY AT HIGH CONCENTRATIONS.

I - unable to quantitate; interference present

#933919 → had to dilute; MDL's ② 10

②

STATE LABORATORY OF PUBLIC HEALTH  
PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

m42      mWB      m26      m81      m82      SWI

PURGEABLE COMPOUNDS	LAB NO	933915	933917	933919	933921	933923	933925
	FIELD NO	OM-37	OM-41	OM-45	OM-68	OM-72	OM-76
COMPOUND	TYPE	(1)	(1)	(1)	(1)	(1)	(2)
	UNITS	(pg/l)pg/kg	(pg/l)pg/kg	(pg/l)pg/kg	(pg/l)pg/kg	(pg/l)pg/kg	(pg/l)pg/kg
DIBROMOMETHANE	5 ppb	u	u	u	u	u	u
4-METHYL-2-PENTANONE				37			
CIS-1,3-DICHLOROPROPENE		↓	↓	u	↓	↓	
TOLUENE		trace <sup>B</sup>	22	3476	trace	15	
TRANS-1,3-DICHLOROPROPENE	↓	u	u	u	u	u	
1,1,2,2-TETRACHLOROETHANE	10 ppb						
1,1,2-TRICHLOROETHANE	5			↓			
2-HEXANONE	10		↓	59		↓	
TETRACHLOROETHENE	5		907	u		14	
DIBROMOCHLOROMETHANE	10		u			trace	
ETHYLENE DIBROMIDE	5					u	
CHLOROBENZENE	↓						
1,1,1,2-TETRACHLOROETHANE	10		↓	↓	↓	↓	
ETHYL BENZENE	5		8	297	trace	trace	↓
XYLENES	10		403	2574	u	25	trace
STYRENE	5		u	114		u	u
BROMOFORM	10			u		75	
TRANS-1,4-DICHLORO-2-BUTENE	80					u	
1,2,3-TRICHLOROPROPANE	200						
1,4-DICHLOROBENZENE	10						
1,2-DICHLOROBENZENE	↓						
1,2-DIBROMO-3-CHLOROPROPANE	200						
VINYL ACETATE	↓				↓	↓	↓
Methyl-t-butyl ether	5 ppb	↓	↓	↓	25	12	35
Hydrocarbons	⊕/⊖	⊖	⊕	⊕	⊖	⊖	⊖
Substituted benzenes	⊕/⊖	⊖	⊕	⊕	⊖	⊖	⊖

↑MDL↑

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- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- U - Material was analyzed for but not detected. The number is the Minimum Detection Limit.
- NA - Not analyzed.
- 1/ - Tentative identification.
- 2/ - On NRDC List of Priority Pollutants.

H - COMPOUND RELIABLY DETECTABLE ONLY AT HIGH CONCENTRATIONS.

DEHNR 3088-O (10/93)

PURGCOR.ORG

B - trace amt. present in lab blank.

# 933929 → had to dilute ; MDL's ⊗ 5

(3)

STATE LABORATORY OF PUBLIC HEALTH  
PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

SW2 SW3 SW4 DW1 DO1 M30

PURGEABLE COMPOUNDS	LAB NO	933927	933929	933931	933933	933935	933936
	FIELD NO	OM-83	OM-90	OM-97	OM-104	OM-119	OM-124
COMPOUND	TYPE	(2)	(2)	(2)	(1)	(1)	(1)
	UNITS	(pg/l)ug/kg	(pg/l)ug/kg	(pg/l)ug/kg	(pg/l)ug/kg	(pg/l)ug/kg	(pg/l)ug/kg
CHLOROMETHANE	20 ppb	u	u	u	u	u	u
VINYL CHLORIDE	10						
BROMOMETHANE	20						
CHLOROETHANE	10						
TRICHLOROFLUOROMETHANE	10		✓	✓			
ACETONE	20		(+) I	(+) I			
1,1-DICHLOROETHENE	5		u	u			
IODOMETHANE	10						
METHYLENE CHLORIDE	5						
CARBON DISULFIDE	↓						
TRANS-1,2-DICHLOROETHENE	↓						
ACRYLONITRILE	200						
1,1-DICHLOROETHANE	5						
2-BUTANONE	20						
CIS-1,2-DICHLOROETHENE	5		✓				
CHLOROFORM	↓		8 J				
1,1,1-TRICHLOROETHANE	↓		u				
CARBON TETRACHLORIDE	10	✓		✓			✓
BENZENE	5	trace		5			2 J
1,2-DICHLOROETHANE	↓	38		u			1 J
TRICHLOROETHENE	↓	u					u
1,2-DICHLOROPROPANE	↓						
BROMODICHLOROMETHANE	10	✓		✓			✓
Isopropyl ether	5	737	✓	68	✓	✓	65

↑MDL↑

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- NA - Not analyzed.
- 1/ - Tentative identification.
- 2/ - On NRDC List of Priority Pollutants.
- H - COMPOUND RELIABLY DETECTABLE ONLY AT HIGH CONCENTRATIONS.

I - unable to quantitate ; interference present

STATE LABORATORY OF PUBLIC HEALTH  
PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

SW2 SW3 SW4 DW1 001 M30

PURGEABLE COMPOUNDS	LAB NO	933927	933929	933931	933933	933935	933936
	FIELD NO	OM-83	OM-90	OM-97	OM-104	OM-119	OM-124
COMPOUND	TYPE	(2)	(2)	(2)	(1)	(1)	(1)
	UNITS	(pg/l)pg/kg	(pg/l)pg/kg	(pg/l)pg/kg	(pg/l)pg/kg	(pg/l)pg/kg	(pg/l)pg/kg
DIBROMOMETHANE	5 ppb	u	u	u	u	u	u
4-METHYL-2-PENTANONE		6	551	7			trace
CIS-1,3-DICHLOROPROPENE		u	u	u			u
TOLUENE		trace	30				trace
TRANS-1,3-DICHLOROPROPENE	↓	u	u				u
1,1,2,2-TETRACHLOROETHANE	10 ppb						
1,1,2-TRICHLOROETHANE	5						
2-HEXANONE	10						
TETRACHLOROETHENE	5						
DIBROMOCHLOROMETHANE	10						
ETHYLENE DIBROMIDE	5						
CHLOROBENZENE	↓						
1,1,1,2-TETRACHLOROETHANE	10		↓	↓			
ETHYL BENZENE	5	↓	77	trace			↓
XYLENES	10	trace	910	5			trace
STYRENE	5	u	u	u			u
BROMOFORM	10						
TRANS-1,4-DICHLORO-2-BUTENE	80						
1,2,3-TRICHLOROPROPANE	200						
1,4-DICHLOROBENZENE	10						
1,2-DICHLOROBENZENE	↓						
1,2-DIBROMO-3-CHLOROPROPANE	200						
VINYL ACETATE	↓	↓		↓			
Methyl-t-butyl ether	5	5	↓	15	↓	↓	↓
Hydrocarbons	⊕/⊖	⊖	⊖	⊕	⊖	⊖	⊖
Substituted benzenes	⊕/⊖	⊖	⊖	⊖	⊖	⊖	⊖

↑MDL↑

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- 2/ - On NRDC List of Priority Pollutants.

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STATE LABORATORY OF PUBLIC HEALTH  
 PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

#933948  
 100 dilution  
 (MDL's @100)  
 V 816

ORGANIC CHEMICAL ANALYSIS  
 M30 E02 C03 B04 B1a

PURGEABLE COMPOUNDS	LAB NO	933938	933940	933942	933944	933946	933948
	FIELD NO	OM-128	OM-1	OM-4	OM-7	OM-10	OM-13
COMPOUND	TYPE	(1)	(3)	(3)	(3)	(3)	(3)
	UNITS	pg/l (pg/kg)	pg/l (pg/kg)	pg/l (pg/kg)	pg/l (pg/kg)	pg/l (pg/kg)	pg/l (pg/kg)
CHLOROMETHANE	20 pph	u	u	u	u	u	u
VINYL CHLORIDE	10						
BROMOMETHANE	20						
CHLOROETHANE	10						
TRICHLOROFLUOROMETHANE	10			∇		∇	∇
ACETONE	20			⊕ <sup>I</sup>		⊕ <sup>I</sup>	⊕ <sup>I</sup>
1,1-DICHLOROETHENE	5			u		u	u
IODOMETHANE	10						
METHYLENE CHLORIDE	5						
CARBON DISULFIDE	↓						
TRANS-1,2-DICHLOROETHENE	↓						
ACRYLONITRILE	200						
1,1-DICHLOROETHANE	5						
2-BUTANONE	20				∇	∇	∇
CIS-1,2-DICHLOROETHENE	5				55	37	4207
CHLOROFORM	↓				u	u	u
1,1,1-TRICHLOROETHANE	↓						
CARBON TETRACHLORIDE	10	∇		∇	∇	∇	∇
BENZENE	5	2J		17	2J	2J	165
1,2-DICHLOROETHANE	↓	1J		u	u	u	u
TRICHLOROETHENE	↓	u			338	1005	6438
1,2-DICHLOROPROPANE	↓				u	u	u
BROMODICHLOROMETHANE	10	∇					
Isopropyl ether	5	62	∇	∇	∇	∇	∇

↑MDL↑

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- U - Material was analyzed for but not detected. The number is the Minimum Detection Limit.
- NA - Not analyzed.
- 1/ - Tentative identification.
- 2/ - On ERDC List of Priority Pollutants.
- H - COMPOUND RELIABLY DETECTABLE ONLY AT HIGH CONCENTRATIONS.

I - unable to quantitate; interference present

STATE LABORATORY OF PUBLIC HEALTH  
PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

M30 E02 C03 B04 B1a B1b

PURGEABLE COMPOUNDS	LAB NO	933938	933940	933942	933944	933946	933948
	FIELD NO	OM-128	OM-1	OM-4	OM-7	OM-10	OM-13
COMPOUND	TYPE	(1)	(3)	(3)	(3)	(3)	(3)
	UNITS	pg/l/pg/kg	pg/l/pg/kg	pg/l/pg/kg	pg/l/pg/kg	pg/l/pg/kg	pg/l/pg/kg
DIBROMOMETHANE	5 ppb	u	u	u	u	u	u
4-METHYL-2-PENTANONE		trace			398		
CIS-1,3-DICHLOROPROPENE		u		✓	u	✓	✓
TOLUENE		trace		22	82	91	397
TRANS-1,3-DICHLOROPROPENE	↓	u		u	u	u	u
1,1,2,2-TETRACHLOROETHANE	10 ppb						
1,1,2-TRICHLOROETHANE	5				✓		
2-HEXANONE	10	✓			2747	✓	✓
TETRACHLOROETHENE	5	55			21,330	47,938	137,868
DIBROMOCHLOROMETHANE	10	u			u	u	u
ETHYLENE DIBROMIDE	5						
CHLOROBENZENE	↓						
1,1,1,2-TETRACHLOROETHANE	10			✓	✓	✓	✓
ETHYL BENZENE	5			368	191	641	1146
XYLENES	10			2749	399	11,829	37,451
STYRENE	5			u	u	u	u
BROMOFORM	10						
TRANS-1,4-DICHLORO-2-BUTENE	80						
1,2,3-TRICHLOROPROPANE	200						
1,4-DICHLOROBENZENE	10						
1,2-DICHLOROBENZENE	↓						
1,2-DIBROMO-3-CHLOROPROPANE	200						
VINYL ACETATE	↓						
Methyl-t-butyl ether	5	✓	✓	✓	✓	✓	✓
Hydrocarbons	⊕/⊖	⊖	⊖	⊕	⊕	⊕	⊕
Substituted benzenes	⊕/⊖	⊖	⊖	⊕	⊕	⊕	⊕

↑MDL↑

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H - COMPOUND RELIABLY DETECTABLE ONLY AT HIGH CONCENTRATIONS.  
DEHNR 3068-O (10/93)

STATE LABORATORY OF PUBLIC HEALTH  
 PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

TC2 SFI E01 CUL DD2 FDI

PURGEABLE COMPOUNDS	LAB NO	933950	933952	933954	933956	933958	933960
	FIELD NO	OM-19	OM-22	OM-25	OM-28	OM-34	OM-49
COMPOUND	TYPE	(3)	(3)	(3)	(3)	(7)	(3)
	UNITS	pg/l (ug/kg)					
CHLOROMETHANE	20 ppb	u	u	u	u	u	u
VINYL CHLORIDE	10					3432	
BROMOMETHANE	20					u	
CHLOROETHANE	10						
TRICHLOROFLUOROMETHANE	10		✓			↓	
ACETONE	20		⊕			⊕	
1,1-DICHLOROETHENE	5		u			10	
IODOMETHANE	10					u	
METHYLENE CHLORIDE	5					↓	
CARBON DISULFIDE	↓					25	
TRANS-1,2-DICHLOROETHENE	↓					8	
ACRYLONITRILE	200					u	
1,1-DICHLOROETHANE	5		✓			↓	
2-BUTANONE	20		55			55	
CIS-1,2-DICHLOROETHENE	5		u			477	
CHLOROFORM	↓					u	
1,1,1-TRICHLOROETHANE	↓					↓	
CARBON TETRACHLORIDE	10					↓	
BENZENE	5					trace	
1,2-DICHLOROETHANE	↓					u	
TRICHLOROETHENE	↓					118	
1,2-DICHLOROPROPANE	↓					u	
BROMODICHLOROMETHANE	10	✓				↓	
Isopropyl ether	5	u	↓	✓	↓	↓	↓

↑MDL↑

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- H - COMPOUND RELIABLY DETECTABLE ONLY AT HIGH CONCENTRATIONS.

STATE LABORATORY OF PUBLIC HEALTH  
 PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

TC2 SFI EOI C4L DO2 FDI

PURGEABLE COMPOUNDS	LAB NO	933950	933952	933954	933956	933958	933960
	FIELD NO	OM-19	OM-22	OM-25	OM-28	OM-34	OM-49
COMPOUND	TYPE	(3)	(3)	(3)	(3)	(7)	(3)
	UNITS	pg/l (pg/kg)	pg/l (pg/kg)	pg/l (pg/kg)	pg/l (pg/kg)	pg/l pg/kg	pg/l (pg/kg)
DIBROMOMETHANE	5 ppb	u	u	u	u	u	u
4-METHYL-2-PENTANONE	↓	↓	105 <sup>v</sup>	↓	u	548 <sup>v</sup>	
CIS-1,3-DICHLOROPROPENE	↓	↓	u	↓		u	
TOLUENE	↓	trace		54		1952	
TRANS-1,3-DICHLOROPROPENE	↓	u		u		u	
1,1,1,2-TETRACHLOROETHANE	10 ppb					↓	
1,1,2-TRICHLOROETHANE	5					↓	
2-HEXANONE	10					369 <sup>v</sup>	
TETRACHLOROETHENE	5					658	
DIBROMOCHLOROMETHANE	10					u	
ETHYLENE DIBROMIDE	5					↓	
CHLOROBENZENE	↓					↓	
1,1,1,2-TETRACHLOROETHANE	10			↓		↓	
ETHYL BENZENE	5			trace		169	
XYLENES	10			10		1063	
STYRENE	5			u		u	
BROMOFORM	10					↓	
TRANS-1,4-DICHLORO-2-BUTENE	80					↓	
1,2,3-TRICHLOROPROPANE	200					↓	
1,4-DICHLOROBENZENE	10					↓	
1,2-DICHLOROBENZENE	↓					↓	
1,2-DIBROMO-3-CHLOROPROPANE	200					↓	
VINYL ACETATE	↓	↓				↓	
Methyl-t-butyl ether	5	u	↓	↓	↓	↓	↓
Hydrocarbons	⊕/⊖	⊖	⊖	⊖	⊖	⊕	⊖
Substituted benzenes	⊕/⊖	⊖	⊖	⊖	⊖	⊕	⊖

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933964 → MDL's (X) 10 due to dilution

933966 → MDL's (X) " " "

(9)

STATE LABORATORY OF PUBLIC HEALTH  
PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

H01      √T01      √T01      G01      SW1-50      SW2-50

PURGEABLE COMPOUNDS	LAB NO	933962	933964	933966	933968	933970	933972
	FIELD NO	OM-52	OM-55	OM-58	OM-61	OM-80	OM-87
COMPOUND	TYPE	(3)	(3)	(3)	(7)	(4)	(4)
	UNITS	pg/l (pg/kg)					
CHLOROMETHANE	20 ppb	u	u	u	u	u	u
VINYL CHLORIDE	10						
BROMOMETHANE	20						
CHLOROETHANE	10						
TRICHLOROFLUOROMETHANE	10		↓	↓		↓	
ACETONE	20		⊕	⊕		⊕	
1,1-DICHLOROETHENE	5		u	u		u	
IODOMETHANE	10		↓		↓		
METHYLENE CHLORIDE	5		5J,C		5J,C		
CARBON DISULFIDE	↓		u		u		
TRANS-1,2-DICHLOROETHENE	↓						
ACRYLONITRILE	200		↓				
1,1-DICHLOROETHANE	5		↓				
2-BUTANONE	20		5J				
CIS-1,2-DICHLOROETHENE	5		u				
CHLOROFORM	↓						
1,1,1-TRICHLOROETHANE	↓						
CARBON TETRACHLORIDE	10			↓			
BENZENE	5			2J			
1,2-DICHLOROETHANE	↓			u			
TRICHLOROETHENE	↓						
1,2-DICHLOROPROPANE	↓						
BROMODICHLOROMETHANE	10						
Isopropyl ether	5	↓	↓	↓	↓	↓	↓

↑MDL↑

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DEHNR 3065-O (10/93)

PURGCOM.ORG

C - common lab contaminant

\*933966 → MDL's @ 100 (based on dilution)

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STATE LABORATORY OF PUBLIC HEALTH  
PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

PURGEABLE COMPOUNDS	LAB NO	933962	933964	933966	933968	933970	933972
	FIELD NO	OM-52	OM-55	OM-58	OM-61	OM-80	OM-87
COMPOUND	TYPE	(3)	(3)	(3)	(7)	(4)	(4)
	UNITS	pg/l (ug/kg)	pg/l (ug/kg)	pg/l (ug/kg)	pg/l (ug/kg)	pg/l (ug/kg)	pg/l (ug/kg)
DIBROMOMETHANE	5 ppb	u	u	u	u	u	u
4-METHYL-2-PENTANONE	↓		97 <sup>L</sup>	15,674 <sup>L</sup>			
CIS-1,3-DICHLOROPROPENE			u	u			
TOLUENE			36	25,236			
TRANS-1,3-DICHLOROPROPENE	↓		u	u			
1,1,2,2-TETRACHLOROETHANE	10 ppb		↓	↓			
1,1,2-TRICHLOROETHANE	5		↓	↓		↓	
2-HEXANONE	10		31 <sup>L</sup>	2616 <sup>L</sup>		8 <sup>L</sup>	
TETRACHLOROETHENE	5		u	u		u	
DIBROMOCHLOROMETHANE	10						
ETHYLENE DIBROMIDE	5						
CHLOROBENZENE	↓						
1,1,1,2-TETRACHLOROETHANE	10		↓	↓			
ETHYL BENZENE	5		147	24,448			
XYLENES	10		2042	131,423			
STYRENE	5		u	4862			
BROMOFORM	10			u			
TRANS-1,4-DICHLORO-2-BUTENE	80						
1,2,3-TRICHLOROPROPANE	200						
1,4-DICHLOROBENZENE	10						
1,2-DICHLOROBENZENE	↓						
1,2-DIBROMO-3-CHLOROPROPANE	200						
VINYL ACETATE	↓	↓					
Methyl-t-butyl ether	5	u	↓	182 <sup>L</sup>	↓	↓	↓
Hydrocarbons	⊕/⊖	⊖	⊕	⊕	⊖	⊕	⊖
Substituted benzenes	⊕/⊖	⊖	⊕	⊕	⊖	⊖	⊖

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933980 → MDL's @ 10 due to dilution

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STATE LABORATORY OF PUBLIC HEALTH  
PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

SW3-SD SW4-SD E01 ✓C03

PURGEABLE COMPOUNDS	LAB NO	933974	933976	933978	933980		
	FIELD NO	OM-94	OM-101	OM-112	OM-132		
COMPOUND	TYPE	(4)	(4)	(3)	(3)	( )	( )
	UNITS	µg/l (µg/kg)	µg/l (µg/kg)	µg/l (µg/kg)	µg/l (µg/kg)	µg/l µg/kg	µg/l µg/kg
CHLOROMETHANE	20 ppb	u	u	u	u		
VINYL CHLORIDE	10	↓	↓	↓	↓		
BROMOMETHANE	20	↓	↓	↓	↓		
CHLOROETHANE	10	↓	↓	↓	↓		
TRICHLOROFLUOROMETHANE	10	✓	✓	✓	✓		
ACETONE	20	⊕	⊕	⊕	⊕		
1,1-DICHLOROETHENE	5	u	u	u	u		
IODOMETHANE	10	↓	↓	↓	↓		
METHYLENE CHLORIDE	5	10C	150C	10C	✓		
CARBON DISULFIDE	↓	u	u	u	3J		
TRANS-1,2-DICHLOROETHENE	↓				u		
ACRYLONITRILE	200						
1,1-DICHLOROETHANE	5						
2-BUTANONE	20						
CIS-1,2-DICHLOROETHENE	5						
CHLOROFORM	↓						
1,1,1-TRICHLOROETHANE	↓						
CARBON TETRACHLORIDE	10				✓		
BENZENE	5				9		
1,2-DICHLOROETHANE	↓				u		
TRICHLOROETHANE	↓						
1,2-DICHLOROPROPANE	↓						
BROMODICHLOROMETHANE	10	↓	↓	↓	↓		
Isopropyl ether	5	✓	✓	✓	✓		

↑MDL↑

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DEHNR 3085-0 (10/93)

PURGC0M.ORG

C - COMMON LAB CONTAMINANT.

STATE LABORATORY OF PUBLIC HEALTH  
 PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

SW3-SD SW4-SD E01 Co3

PURGEABLE COMPOUNDS	LAB NO	933974	933976	933978	933980		
	FIELD NO	OM-94	OM-101	OM-112	OM-132		
COMPOUND	TYPE	(4)	(4)	(3)	(3)	( )	( )
	UNITS	pg/l (ug/kg)	pg/l (ug/kg)	pg/l (ug/kg)	pg/l (ug/kg)	pg/l ug/kg	pg/l ug/kg
DIBROMOMETHANE	5 ppb	u	u	u	u		
4-METHYL-2-PENTANONE					1208 <sup>L</sup>		
CIS-1,3-DICHLOROPROPENE					u		
TOLUENE					363		
TRANS-1,3-DICHLOROPROPENE	↓				u		
1,1,2,2-TETRACHLOROETHANE	10 ppb				↓		
1,1,2-TRICHLOROETHANE	5		✓		↓		
2-HEXANONE	10		15 <sup>L</sup>		500 <sup>L</sup>		
TETRACHLOROETHENE	5		u		u		
DIBROMOCHLOROMETHANE	10						
ETHYLENE DIBROMIDE	5						
CHLOROGENZENE	↓						
1,1,1,2-TETRACHLOROETHANE	10				↓		
ETHYL BENZENE	5				1008		
XYLENES	10				3474		
STYRENE	5				u		
BROMOFORM	10						
TRANS-1,4-DICHLORO-2-BUTENE	80						
1,2,3-TRICHLOROPROPANE	200						
1,4-DICHLOROBENZENE	10						
1,2-DICHLOROBENZENE	↓						
1,2-DIBROMO-3-CHLOROPROPANE	200						
VINYL ACETATE	↓	↓	↓	↓	↓		
Methyl-t-butyl ether	5	trace <sup>L</sup>	4 <sup>J</sup>	1 <sup>J</sup>	✓		
Hydrocarbons	⊕/⊖	⊖	⊕	⊕	⊕		
Substituted benzenes	⊕/⊖	⊖	⊖	⊖	⊕		

MDL ↑

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 DEHNR 3068-O (10/93)

STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

(M42) ORGANIC CHEMICAL ANALYSIS (M26) (MB1) (MB2) (SW1-SW)

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933916	933918	933920	933922	933924	933926
	FIELD #	OM-39	OM-43	OM-47	OM-70	OM-74	OM-78
COMPOUND	TYPE	(1)	(1)	(1)	(1)	(1)	(2)
	UNITS	μg/l μg/kg					
N-nitrosodimethylamine	10/330	K	K	K	K	K	K
bis(2-chloroethyl)ether							
2-chlorophenol							
phenol							
1,3-dichlorobenzene							
1,4-dichlorobenzene							
1,2-dichlorobenzene							
bis(2-chloroisopropyl)ether							
hexachloroethane							
N-nitroso-di-n-propylamine							
nitrobenzene							
isophorone							
2-nitrophenol							
2,4-dimethylphenol							
bis(2-chloroethoxy)methane							
2,4-dichlorophenol							
1,2,4-trichlorobenzene							
naphthalene			340	37,500		10K	
hexachlorobutadiene			K	K		K	
4-chloro-m-cresol							
hexachlorocyclopentadiene							
2,4,6-trichlorophenol							
2-chloronaphthalene							
acenaphthylene							
dimethyl phthalate							
2,6-dinitrotoluene							
acenaphthene							
2,4-dinitrophenol	50/1650						
2,4-dinitrotoluene	10/330						
4-nitrophenol	50/1650						
fluorene	10/330		12	10,000			
4-chlorophenylphenylether			K	K			
diethyl phthalate							
4,6-dinitro-o-cresol	50/1650						
diphenylamine	10/330						
azobenzene							
4-bromophenylphenylether							
hexachlorobenzene							
pentachlorophenol	50/1650						
phenanthrene	10/330		19	13,000			
anthracene			14	6,000			
dibutyl phthalate			K	K			
fluoranthene			K	K			

MDL  
 H<sub>2</sub>O/SOIL

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 DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

BASE/NEUTRAL AND ACID EXTRACTABLES COMPOUND	LAB NO	m42		mWB		m26		mB1		mB2		SW1-SW	
		FIELD #	TYPE	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS
pyrene	10/330	933916	(1)	µg/l	933918	(1)	µg/l	933920	(1)	µg/l	933922	(1)	µg/l
benzidine	50/1650	0M-39	(1)	µg/kg	0M-43	(1)	µg/kg	0M-47	(1)	µg/kg	0M-70	(1)	µg/kg
butyl benzyl phthalate	10/330												
benz(a)anthracene	↓												
chrysene	↓												
3,3-dichlorobenzidine	50/1650												
bis(2-ethylhexyl)phthalate	10/330												
di-n-octyl phthalate	10/330												
benzo(b)fluoranthene	50/1650												
benzo(k)fluoranthene	↓												
benzo(a)pyrene	↓												
indeno(1,2,3-cd)pyrene	↓												
dibenzo(a,h)anthracene	↓												
benzo(g,h,i)perylene	↓												
aniline	50/1650			u			u						u
benzoic acid	↓												
benzyl alcohol	↓												
4-chloroaniline	↓												
dibenzofuran	10/330												
2-methylnaphthalene	↓						180						10K
2-methylphenol	↓						u						u
4-methylphenol	↓												
2-nitroaniline	50/1650												
3-nitroaniline	↓												
4-nitroaniline	↓												
2,4,5-trichlorophenol	↓												
PETROLEUM TYPE - HYDROCARBONS	+/-			⊖			⊕						⊖

MDL  
 H2O/SOIL

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 DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

SW2-SW      SW3-SW      SW4-SW      DW1      M30      M30D

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933928	933930	933932	933934	933937	933939
	FIELD #	0M-85	0M-92	0M-99	0M-106	0M-126	0M-130
COMPOUND	TYPE	(2)	(2)	(2)	(1)	(1)	(1)
	UNITS	µg/l µg/kg					
N-nitrosodimethylamine	10/330	U	U	U	U	U	U
bis(2-chloroethyl)ether							
2-chlorophenol							
phenol							
1,3-dichlorobenzene							
1,4-dichlorobenzene							
1,2-dichlorobenzene							
bis(2-chloroisopropyl)ether							
hexachloroethane							
N-nitroso-di-n-propylamine							
nitrobenzene							
isophorone							
2-nitrophenol							
2,4-dimethylphenol							
bis(2-chloroethoxy)methane							
2,4-dichlorophenol							
1,2,4-trichlorobenzene							
naphthalene							
hexachlorobutadiene						10K	10K
4-chloro-m-cresol						U	U
hexachlorocyclopentadiene							
2,4,6-trichlorophenol							
2-chloronaphthalene							
acenaphthylene							
dimethyl phthalate							
2,6-dinitrotoluene							
acenaphthene							
2,4-dinitrophenol	50/1650						
2,4-dinitrotoluene	10/330						
4-nitrophenol	50/1650						
fluorene	10/330						
4-chlorophenylphenylether							
diethyl phthalate							
4,6-dinitro-o-cresol	50/1650						
diphenylamine	10/330						
azobenzene							
4-bromophenylphenylether							
hexachlorobenzene							
pentachlorophenol	50/1650						
phenanthrene	10/330						
anthracene							
dibutyl phthalate							
fluoranthene							

MDL  
 H<sub>2</sub>O/SOIL

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STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

sw2-sw sw3-sw sw4-sw owl m30 m30D  
 ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933928	933930	933932	933934	933937	933939
COMPOUND	FIELD #	OM-85	OM-92	OM-99	OM-106	OM-126	OM-130
	TYPE	(2)	(2)	(2)	(1)	(1)	(1)
	UNITS	µg/l µg/kg					
pyrene	10/330	u	u	u	u	u	u
benzidine	50/1650						
butyl benzyl phthalate	10/330						
benz(a)anthracene	↓						
chrysene	↓						
3,3-dichlorobenzidine	50/1650						
bis(2-ethylhexyl)phthalate	10/330						
di-n-octyl phthalate	10/330						
benzo(b)fluoranthene	50/1650						
benzo(k)fluoranthene	↓						
benzo(a)pyrene	↓						
indeno(1,2,3-cd)pyrene	↓						
dibenzo(a,h)anthracene	↓	✓	✓	✓	✓	✓	✓
benzo(g,h,i)perylene	↓	✓	✓	✓	✓	✓	✓
aniline	50/1650	u	u	u	u	u	u
benzoic acid	↓						
benzyl alcohol	↓						
4-chloroaniline	↓						
dibenzofuran	10/330						
2-methylnaphthalene	↓					10K	10K
2-methylphenol	↓					u	u
4-methylphenol	↓						
2-nitroaniline	50/1650						
3-nitroaniline	↓						
4-nitroaniline	↓	✓	✓	✓	✓	✓	✓
2,4,5-trichlorophenol	↓	✓	✓	✓	✓	✓	✓
<b>PETROLEUM TYPE - HYDROCARBONS</b>	<b>+/-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

MDL  
 H2O/50IL

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STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

(E02) (C03) (B04) (B1a) (B1b) (TC2)  
 ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933941	933943	933945	933947	933949	933951
COMPOUND	FIELD #	OM-2	OM-5	OM-8	OM-11	OM-14	OM-20
	TYPE	(3)	(3)	(3)	(3)	(3)	(3)
	UNITS	<del>ppm</del> (µg/kg)					
N-nitrosodimethylamine	10/330	U	U	U	U	U	U
bis(2-chloroethyl)ether							
2-chlorophenol							
phenol							
1,3-dichlorobenzene							
1,4-dichlorobenzene							
1,2-dichlorobenzene							
bis(2-chloroisopropyl)ether							
hexachloroethane							
N-nitroso-di-n-propylamine							
nitrobenzene							
isophorone							
2-nitrophenol							
2,4-dimethylphenol							
bis(2-chloroethoxy)methane							
2,4-dichlorophenol							
1,2,4-trichlorobenzene							
naphthalene			21,667	833	26,667	31,667	
hexachlorobutadiene			U	U	U	U	
4-chloro-m-cresol							
hexachlorocyclopentadiene							
2,4,6-trichlorophenol							
2-chloronaphthalene							
acenaphthylene							
dimethyl phthalate							
2,6-dinitrotoluene							
acenaphthene							
2,4-dinitrophenol	50/1650						
2,4-dinitrotoluene	10/330						
4-nitrophenol	50/1650						
fluorene	10/330		7,333	8,333	16,333	36,667	
4-chlorophenylphenylether			U	U	U	U	
diethyl phthalate							
4,6-dinitro-o-cresol	50/1650						
diphenylamine	10/330						
azobenzene							
4-bromophenylphenylether							
hexachlorobenzene							
pentachlorophenol	50/1650						
phenanthrene	10/330		11,000	4,500	7,667	6,667	
anthracene			7,667	3,000	2,000	3,333	
dibutyl phthalate			U	U	U	U	
fluoranthene			U	U	U	U	

MDL  
 H<sub>2</sub>O/SOIL

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STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES, N.C.: DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

E02 <sup>CO3</sup> ORGANIC CHEMICAL ANALYSIS (B04) (B1a) (B1b) (TC2)

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933941	933943	933945	933947	933949	933951
COMPOUND	FIELD #	OM-2	OM-5	OM-8	OM-11	OM-14	OM-20
	TYPE	(3)	(3)	(3)	(3)	(3)	(3)
	UNITS	ppm (ug/kg)					
pyrene	10/330	u	u	u	u	u	u
benzidine	50/1650						
butyl benzyl phthalate	10/330						
benz(a)anthracene	↓						
chrysene	↓						
3,3-dichlorobenzidine	50/1650						
bis(2-ethylhexyl)phthalate	10/330						
di-n-octyl phthalate	10/330						
benzo(b)fluoranthene	50/1650						
benzo(k)fluoranthene	↓						
benzo(a)pyrene	↓						
indeno(1,2,3-cd)pyrene	↓						
dibenzo(a,h)anthracene	↓	✓	✓	✓	✓	✓	✓
benzo(g,h,i)perylene	↓	✓	✓	✓	✓	✓	✓
aniline	50/1650	u	u	u	u	u	u
benzoic acid	↓						
benzyl alcohol	↓						
4-chloroaniline	↓						
dibenzofuran	10/330						
2-methylnaphthalene	↓		46,000	7,000	242,000	443,333	
2-methylphenol	↓		u	u	u	u	
4-methylphenol	↓						
2-nitroaniline	50/1650						
3-nitroaniline	↓						
4-nitroaniline	↓						
2,4,5-trichlorophenol	↓	✓	✓	✓	✓	✓	✓
<b>PETROLEUM TYPE - HYDROCARBONS</b>	<b>+/-</b>	<b>(-)</b>	<b>(+)</b>	<b>(+)</b>	<b>(+)</b>	<b>(+)</b>	<b>(-)</b>

MDL  
H<sub>2</sub>O/SOIL

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 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

(SFL) ORGANIC CHEMICAL ANALYSIS (EOL) (CUL) 002 FO1 HO1

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933953	933955	933957	933959	933961	933963
COMPOUND	FIELD #	0M-23	0M-26	0M-29	0M-35	0M-50	0M-53
	TYPE	(3)	(3)	(3)	(7)	(3)	(3)
	UNITS	<del>µg/kg</del> µg/kg					
N-nitrosodimethylamine	10/330	U	U	U	U	U	U
bis(2-chloroethyl)ether							
2-chlorophenol							
phenol							
1,3-dichlorobenzene							
1,4-dichlorobenzene							
1,2-dichlorobenzene							
bis(2-chloroisopropyl)ether							
hexachloroethane							
N-nitroso-di-n-propylamine							
nitrobenzene							
isophorone							
2-nitrophenol							
2,4-dimethylphenol							
bis(2-chloroethoxy)methane							
2,4-dichlorophenol							
1,2,4-trichlorobenzene							
naphthalene					330K		
hexachlorobutadiene					U		
4-chloro-m-cresol							
hexachlorocyclopentadiene							
2,4,6-trichlorophenol							
2-chloronaphthalene							
acenaphthylene							
dimethyl phthalate							
2,6-dinitrotoluene							
acenaphthene							
2,4-dinitrophenol	50/1650						
2,4-dinitrotoluene	10/330						
4-nitrophenol	50/1650						
fluorene	10/330				437		
4-chlorophenylphenylether					U		
diethyl phthalate							
4,6-dinitro-o-cresol	50/1650						
diphenylamine	10/330						
azobenzene							
4-bromophenylphenylether							
hexachlorobenzene							
pentachlorophenol	50/1650						
phenanthrene	10/330				330K	589	
anthracene					330K	330K	
dibutyl phthalate					U	U	
fluoranthene					13,1667	5,782	

MDL  
 H<sub>2</sub>O/SOIL

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STATE LABORATORY OF PUBLIC HEALTH  
 DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

SFL ORGANIC CHEMICAL ANALYSIS EOL CUL 002 F01 H01

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933953	933955	933957	933959	933961	933963
COMPOUND	FIELD #	0M-23	0M-26	0M-29	0M-35	0M-50	0M-53
	TYPE	(3)	(3)	(3)	(7)	(3)	(3)
	UNITS	<del>ug/g</del> (ug/kg)					
pyrene	10/330	u	u	4,433	2,313	u	u
benzidine	50/1650			u	u		
butyl benzyl phthalate	10/330			u	u		
benz(a)anthracene	↓			113,933	11,833		
chrysene	↓			85,400	17,363		
3,3-dichlorobenzidine	50/1650			u	u		
bis(2-ethylhexyl)phthalate	10/330			↓	↓		
di-n-octyl phthalate	10/330						
benzo(b)fluoranthene	50/1650			165,833	32,523		
benzo(k)fluoranthene	↓			u	u		
benzo(a)pyrene	↓			152,667	35,329		
indeno(1,2,3-cd)pyrene	↓			u	96,792		
dibenzo(a,h)anthracene	↓			u	u		
benzo(g,h,i)perylene	↓	✓	✓	332,583	117,414	✓	✓
aniline	50/1650	u	u	u	u	u	u
benzoic acid	↓						
benzyl alcohol	↓						
4-chloroaniline	↓						
dibenzofuran	10/330				↓		
2-methylnaphthalene	↓				1,028		
2-methylphenol	↓				u		
4-methylphenol	↓						
2-nitroaniline	50/1650						
3-nitroaniline	↓						
4-nitroaniline	↓						
2,4,5-trichlorophenol	↓	✓	✓	✓	✓	✓	✓
PETROLEUM TYPE - HYDROCARBONS	+/-	⊖	⊖	⊖	⊕	⊖	⊖

MDL H2O/501L

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 DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES  
 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

(101) ORGANIC CHEMICAL ANALYSIS (501) (601) SW1SD SW2SD SW3SD

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933965	933967	933969	933971	933973	933975
COMPOUND	FIELD #	OM-56	OM-59	OM-62	OM-81	OM-88	OM-95
	TYPE	(3)	(3)	(7)	(4)	(4)	(4)
	UNITS	<del>ppm</del> (ug/kg)					
N-nitrosodimethylamine	10/330	u	u	u	u	u	u
bis(2-chloroethyl)ether							
2-chlorophenol							
phenol							
1,3-dichlorobenzene							
1,4-dichlorobenzene							
1,2-dichlorobenzene							
bis(2-chloroisopropyl)ether							
hexachloroethane							
N-nitroso-di-n-propylamine							
nitrobenzene							
isophorone							
2-nitrophenol							
2,4-dimethylphenol							
bis(2-chloroethoxy)methane							
2,4-dichlorophenol							
1,2,4-trichlorobenzene		✓	✓		✓		
naphthalene		333	58,333		330K		
hexachlorobutadiene		u	u		u		
4-chloro-m-cresol							
hexachlorocyclopentadiene							
2,4,6-trichlorophenol							
2-chloronaphthalene							
acenaphthylene							
dimethyl phthalate							
2,6-dinitrotoluene							
acenaphthene	↓						
2,4-dinitrophenol	50/1650						
2,4-dinitrotoluene	10/330						
4-nitrophenol	50/1650						
fluorene	10/330						✓ 1600 u
4-chlorophenylphenylether							
diethyl phthalate	↓						
4,6-dinitro-o-cresol	50/1650						
diphenylamine	10/330						
azobenzene							
4-bromophenylphenylether	↓						
hexachlorobenzene							
pentachlorophenol	50/1650				✓	✓	✓
phenanthrene	10/330				1,200	330K	16,433
anthracene					867	330K	u
dibutyl phthalate					u	u	u
fluoranthene	↓	✓	✓	✓	4,533	2,733	42,000

MDL  
 H<sub>2</sub>O/501L

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 P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

501  
 J01 ORGANIC CHEMICAL ANALYSIS G01 SW1 50 SW2 50 SW3 50

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933965	933967	933969	933971	933973	933975
COMPOUND	FIELD #	0M-56	0M-59	0M-62	0M-81	0M-88	0M-95
	TYPE	(3)	(3)	(7)	(4)	(4)	(4)
	UNITS	µg/g (µg/kg)					
pyrene	10/330	u	u	u	12,700	2,567	81,033
benzidine	50/1650				u	u	u
butyl benzyl phthalate	10/330				u		u
benz(a)anthracene	↓				10,700	↓	50,233
chrysene	↓				13,500	15,467	79,550
3,3-dichlorobenzidine	50/1650				u	u	u
bis(2-ethylhexyl)phthalate	10/330				↓	↓	↓
di-n-octyl phthalate	10/330				↓	↓	↓
benzo(b)fluoranthene	50/1650				14,333	33,700	106,000
benzo(k)fluoranthene	↓				u	u	u
benzo(a)pyrene	↓				13,833	28,400	49,800
indeno(1,2,3-cd)pyrene	↓				25,867	63,333	65,867
dibenzo(a,h)anthracene	↓				u	70,500	u
benzo(g,h,i)perylene	↓	↓	↓	↓	13,967	87,567	17,467
aniline	50/1650	u	u	u	u	u	u
benzoic acid	↓						
benzyl alcohol	↓						
4-chloroaniline	↓						
dibenzofuran	10/330	↓	↓		↓		
2-methylnaphthalene	↓	633	72,667		330K		
2-methylphenol	↓	u	u		u		
4-methylphenol	↓						
2-nitroaniline	50/1650						
3-nitroaniline	↓						
4-nitroaniline	↓						
2,4,5-trichlorophenol	↓	↓	↓	↓	↓	↓	↓
PETROLEUM TYPE - HYDROCARBONS	+/-	TRACE(+)	(+)	(-)	(+)	TRACE(+)	TRACE(+)

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 H2O/SOIL

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DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES  
P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

SW450 E01  
ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933977	933979				
	FIELD #	0M-102	0M-113				
COMPOUND	TYPE	(4)	(3)	( )	( )	( )	( )
	UNITS	µg/kg	µg/kg	µg/l	µg/kg	µg/l	µg/kg
N-nitrosodimethylamine	10/330	U	U				
bis(2-chloroethyl)ether							
2-chlorophenol							
phenol							
1,3-dichlorobenzene							
1,4-dichlorobenzene							
1,2-dichlorobenzene							
bis(2-chloroisopropyl)ether							
hexachloroethane							
N-nitroso-di-n-propylamine							
nitrobenzene							
isophorone							
2-nitrophenol							
2,4-dimethylphenol							
bis(2-chloroethoxy)methane							
2,4-dichlorophenol							
1,2,4-trichlorobenzene							
naphthalene							
hexachlorobutadiene							
4-chloro-m-cresol							
hexachlorocyclopentadiene							
2,4,6-trichlorophenol							
2-chloronaphthalene							
acenaphthylene							
dimethyl phthalate							
2,6-dinitrotoluene							
acenaphthene							
2,4-dinitrophenol	50/1650						
2,4-dinitrotoluene	10/330						
4-nitrophenol	50/1650						
fluorene	10/330	367					
4-chlorophenylphenylether		U					
diethyl phthalate							
4,6-dinitro-o-cresol	50/1650						
diphenylamine	10/330						
azobenzene							
4-bromophenylphenylether							
hexachlorobenzene							
pentachlorophenol	50/1650						
phenanthrene	10/330	7290	330K				
anthracene		4280	330K				
dibutyl phthalate		U	U				
fluoranthene		4968	867				

MDL  
H<sub>2</sub>O/SOIL

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5045D E01  
 ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	933977	933979				
COMPOUND	FIELD #	0M-102	0M-113	( )	( )	( )	( )
	TYPE	(4)	(3)				
	UNITS	<del>µg/l</del> (µg/kg)	<del>µg/l</del> (µg/kg)	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg
pyrene	10/330	5,217	633				
benzidine	50/1650	u	u				
butyl benzyl phthalate	10/330	u	u				
benz(a)anthracene	↓	10,350	3,133				
chrysene	↓	9,000	3,500				
3,3-dichlorobenzidine	50/1650	u	u				
bis(2-ethylhexyl)phthalate	10/330	↓	↓				
di-n-octyl phthalate	10/330	↓	↓				
benzo(b)fluoranthene	50/1650	15,367	7,200				
benzo(k)fluoranthene	↓	u	u				
benzo(a)pyrene	↓	15,400	7,567				
indeno(1,2,3-cd)pyrene	↓	17,333	4,667				
dibenzo(a,h)anthracene	↓	u	u				
benzo(g,h,i)perylene	↓	16,267	2,567				
aniline	50/1650	u	u				
benzoic acid	↓						
benzyl alcohol	↓						
4-chloroaniline	↓						
dibenzofuran	10/330						
2-methylnaphthalene	↓						
2-methylphenol	↓						
4-methylphenol	↓						
2-nitroaniline	50/1650						
3-nitroaniline	↓						
4-nitroaniline	↓						
2,4,5-trichlorophenol	↓	✓	✓				
PETROLEUM TYPE - HYDROCARBONS	+1-	TRACE (+)	(-)				

MDL  
 H<sub>2</sub>O/SOIL

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Old Mount Holly Road PCE Sample List and Description--  
November 29 and December 1, 1993 Sampling event

OM-E02-SL	SOIL 8'	VOA BNA Metals	background	location E2, approximately 3' west of MW-42
OM-C03-SL	SOIL 6.5'	VOA BNA Metals	onsite below bottom in area of removed tank	location C3, 10' east of utility pole
OM-B04-SL	SOIL 8'	VOA BNA Metals	onsite around suspected tank	location B-4, 4'N of NW corner of bldg, 4'S of fill port on Tank B
OM-B1a-SL	SOIL 8'	VOA BNA Metals	onsite around suspected tank	location B-1
OM-B1b-SL	SOIL 10'	VOA BNA Metals	onsite around suspected tank	location B-1
OM-TC2-SL	SOIL 6'	VOA BNA Metals	in area of reported terra cotta pipe	location TC2, approximately 14' west of outside wall of building, 15'N of southwest corner of building
OM-SF1-SL	SOIL 6.5'	VOA BNA Metals	soil in area of reported sand filter bed-- approximately 42' south of southwestern corner of building and 9' east of wall	location SF1
OM-E01-SL	SOIL 2" below Surface	VOA BNA Metals	background	location E1, in ditch alongside road

OM-CUL-SL	SOIL surface	VOA BNA Metals	soil in area of culvert drainage from Castles property	location CUL
OM-002-CN	Contents of Oil/water separator	VOA BNA Metals	Contents of Oil/water separator	
OM-M42-MW	monitor well, 2"dia., 20'deep	VOA BNA Metals	background	MW-42
OM-MW26-MW	monitor well,	VOA BNA Metals		MW-26*
OM-MWB-MW	monitoring well, 2" dia., 17'deep	VOA BNA Metals		MW-B
OM-F01-SL	SOIL 8'	VOA BNA Metals	in general area of old oil/water separator, 4' NE of utility pole	location F
OM-G01-SD	Sludge in bottom of NPDES sampling location	VOA BNA Metals		Location G
OM-H01-SL	SOIL 8'	VOA BNA Metals	about 8' S of vapor recovery unit	Figure 6, location H
OM-I01-SL	SOIL 4'	VOA BNA Metals	in general area of MW-13	location I
OM-J01-SL	SOIL 8'	VOA BNA Metals	in general area of sludge pit area 2	locaton J-- 10' N gauge on Tank 2
OM-M30-MW	monitoring well--	VOA BNA Metals		MW-30

OM-MB1-MW	monitoring well-- 2"dia., 70'deep	VOA BNA Metals	bedrock well on Exxon Property	BRW-1
OM-MB2-MW	monitoring well-- 2"dia., 47'deep	VOA BNA Metals	bedrock well on Exxon Property	BRW-2
OM-SW1-SW	surface water	VOA BNA Metals	approximately 600' below the point where the discharge from Exxon flows into the intermittent stream	
OM-SW1-SD	surface water sediment	VOA BNA Metals	sediment in surface water pathway	Same location as OM-SW1-SW
OM-SW2-SW	Surface water	VOA BNA Metals	approximately 30' downstream of berm culvery on north side	
OM-SW2-SD	surface water sediment (soil)	VOA BNA Metals		same location as OM-SW2-SW
OM-SW3-SW	surface water	VOA BNA Metals	surface water in pool below Exxon outfall	
OM-SW3-SD	surface water sediment	VOA BNA Metals		same as OM- SW3-SW
OM-SW4-SD &SW	surface water sediment & surface water	VOA BNA Metals	KOCH outfall	
OM-DW1-PW	Drinking water	VOA, pH BNA Metals		Seth Williams 1100 Kiker Circle

\*opened by Exxon consultant without NC Superfund observation

Superfund Section

Hazardous Waste Section

Solid Waste Section

**RECEIVED**  
FEB 03 1994  
SUPERFUND SECTION

CHAIN OF CUSTODY RECORD

Project Name: <u>Old Mt. Holly Rd. PCE site</u>	Sampled by: <u>J. Stanley</u>
Site ID # (NCD#) <u>986 1720 518</u>	Sampler ID _____
Location: <u>Charlotte, NC</u>	Telephone: <u>(919) 733-2801</u>
Address: <u>Old Mt. Holly Rd.</u>	Date Sampled: <u>11/30/91 - 12/1/93</u>
	Time Sampled: _____

Sample Types: Soil \_\_\_\_\_ Water  Waste \_\_\_\_\_ Other \_\_\_\_\_

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Field Sample Numbers

<u>0M-40</u>	<u>0M-71</u>	<u>0M-86</u>	<u>0M-107</u>	<u>0M-131</u>	_____	_____
<u>0M-44</u>	<u>0M-75</u>	<u>0M-93</u>	<u>0M-123</u>	_____	_____	_____
<u>0M-48</u>	<u>0M-79</u>	<u>0M-100</u>	<u>0M-127</u>	_____	_____	_____

Relinquished by: *J. Stanley* (Signature) Date: 12/6/93 Time: 10:10

Received by: *Joyce Davis* (Signature) Date: 12/6/93 Time: 10:15

Relinquished by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Results Reported: *[Signature]* (Signature) Date: 3/5/94 Time: \_\_\_\_\_



























State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



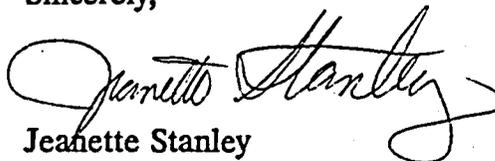
January 4, 1994

Paw Creek Environmental Health and Safety Committee  
Attention: Mr. Bobby Cloninger  
PO Box 571  
Paw Creek, NC 28130

Dear Mr. Cloninger:

Please find enclosed all documents we have generated to our files regarding sites in the Paw Creek area since our October 8, 1993, communication. If you have any questions about the enclosed materials, please contact Pat DeRosa, Head, CERCLA Branch, or myself at (919) 733-2801.

Sincerely,



Jeanette Stanley  
Environmental Chemist  
NC Superfund Section

Attachments

cc: (letter only)  
Kim Clarke  
Debbie Crane  
Pat DeRosa

JS/vc

# Clearing air at Paw Creek

## Officials pushing plan to reduce benzene level

By MARY ELIZABETH DeANGELIS  
Staff Writer

They moved around Paw Creek, to a baseball field, an apartment complex, and a church parking lot, setting up lawn chairs, journals and air-testing equipment at each spot.

Bag by bag, they grabbed, then analyzed samples of air. Last week, N.C. environmental officials announced their results: Residents in the northwest Charlotte community are breathing air with elevated benzene levels.

N.C. scientists say the pollution poses a slight but "unacceptable" risk of leukemia for residents who live near fuel storage facilities there.

So what happens now?

The N.C. attorney general's office has spent several months drafting a proposal known as the "Paw Creek Pact," which calls for the companies to make environ-

mentally friendly improvements at their terminals.

Since the 1960s, companies have leaked or spilled at least 600,000 gallons of fuel at Paw Creek.

The attorney general's office wants the companies to sign the three-year pledge, which calls for a coordinated cleanup effort and better spill prevention plans.

Negotiators also plan to add a new section asking companies to reduce air pollution levels, said Special Deputy Attorney General James Gulick.

"We're in the midst of discussing details with the oil companies about what the terms will be," Gulick said.

One proposal in the pact calls for oil companies to pay for a full-time independent consultant to identify the extent of the contamination.

Other recommendations include:

- Establishing a perimeter around the terminals and any fuel plumes that defines the lines of contamination.

- Regularly sampling water supply wells near the contamination boundaries.

- Testing streams in the community monthly.

- Determining what hazardous waste and chemicals outside of petroleum have been used and disposed of on each terminal property.

Besides soil and groundwater contamination, N.C. environmental officials say air pollution from the tanks could affect anywhere from 243 to 1,817 people who live within a square mile of the terminals.

The risk of developing leukemia from air quality is slim — projected as less than one potential case over 70 years — but still higher than what's considered normal,

state toxicologists say.

Companies can take steps to reduce their air pollution, said Don Reuter, a spokesman for the N.C. Division of Environmental Management.

For example, they can paint dark tanks white and keep them rust-free, which keeps them cooler and releases fewer vapors.

Companies can install different types of equipment, from gaskets to floating roofs, to minimize fumes, Reuter said.

Industry representatives say many of the oil companies have improved operations in recent years, and are willing to consider the recommendations.

"Everyone's objective is to lay it out in a way that competitive companies can agree to steps to be taken, and to assess and prevent any difficulties in the future," said Bill Weatherspoon, executive director of the N.C. Petroleum Council.



GEORGE BREISACHER/STAFF

"It's a live, on-going kind of thing. I think all the parties are hopeful something can be worked out."

Residents say they agree with the pact's recommendations but want to make sure they're included in each step.

"A lot of things need to be clarified," said community leader Bob Cloninger. "But it's a good headstart on all the problems of Paw Creek."

# Benzene blamed for Paw Creek risk

## Small but unacceptable risk of leukemia found at Paw Creek

By MARY ELIZABETH DeANGELIS  
Staff Writer

The air near fuel terminals in Charlotte's Paw Creek community poses a slightly higher — but unacceptable — risk of leukemia to nearby residents, the state's top environmental official said Tuesday.

A state study shows benzene in the air would cause less than one additional case of leukemia in Paw Creek in 70 years, at most.

That's low — but higher than it should be, said Jonathan Howes, N.C. secretary of environment, health and natural resources.

"The risk for this community may not seem great when viewed in these terms," Howes said. "But any risk above what is acceptable is too much. We take this situation very seriously."

Industry officials said the study shows the air at Paw Creek isn't any worse than commonly found in other cities. They said residents face no unusual health risks because of the terminals.

"Both the state's cancer study and the newly released air study

Please see Leukemia/page 5A

## Leukemia

Continued from page 1A

should provide reassurances to the residents of Paw Creek," said Bill Weatherspoon, a spokesman for the N.C. Petroleum Council. "The benzene levels in Paw Creek and downtown Charlotte are the same and are like most other locations in the United States."

Benzene, which is found in gasoline vapor, can cause leukemia. The Paw Creek community in northwest Charlotte is home to the fuel storage terminals of 13 oil companies.

State and Mecklenburg County environmental regulators said they will study each tank site to determine what changes could be made to reduce vapors. In some cases, that could be as simple as painting a dark tank white.



Howes

Oil company officials say they're working to cut down on air pollution at their terminals. For example, Amoco no longer pumps fuel when its vapor recovery equipment is not working, said spokesman Jim Spangler.

Howes and a staff of state environmental experts came to Charlotte Tuesday to present the results of a three-month air quality study. State researchers found that res-

## State study of air at Paw Creek community

■ What did the state study? Environmental inspectors wanted to know the level of benzene at the Paw Creek community. Benzene, which is found in gasoline vapor, can cause leukemia.

■ What did the state find? Levels of benzene exceeded acceptable limits.

■ What does that mean for residents' health? In the worst case, there would be less than one additional case of leukemia. Still, the state called that an "unacceptable" risk.

■ Want to know more? State officials will explain their findings at a public hearing Feb. 9 at 7 p.m. at West Mecklenburg High School. For copies of the study, call (919) 715-4112.

Source: N.C. Department of Environment, Health and Natural Resources

idential areas in Paw Creek had levels of benzene pollution similar to those near uptown.

About 200,000 cars a day create the levels of benzene near uptown. By comparison, an estimated 11,000 cars a day pass by the residential areas sampled in Paw Creek.

## Paw Creek fuel terminals



GEORGE BREISACHER/SUB

Paw Creek oil companies have leaked at least 600,000 in gasoline and other fuel since the 1960s.

Because of residents' concerns, the county tested nearly 400 wells last year and found 15 had water unsafe for drinking. But most of the chemicals tainting the wells are industrial solvents associated with dry cleaning and manufacturing.

"We knew the ground was contaminated and this just proves what we've been saying all along," said community activist Bob Cloninger. "It is above the acceptable level, so it's unacceptable to us."

State health experts said that the risk of developing cancer from breathing air near the fuel terminals is slight, and based on a worse-case scenario. Acceptable levels are those that a person can be exposed to constantly for 70

years without increasing his or her risk of cancer.

Of every million people in North Carolina, 7,749 are expected to get leukemia in their lifetime. Any number more than that is considered unacceptable by the state.

Based on air quality, the number of leukemia cases in Paw Creek would range from 9 to 80 per million over the acceptable limit. Broken down to the size of the community, that's less than one additional leukemia case.

The benzene levels could affect 243 to 1,817 residents who live within a square mile of the tanks, state officials said.

Residents became more concerned last year when a preliminary state study reported finding more leukemia than expected. State cancer experts said the higher incidence was worth watching but there was no evidence of an increased cancer risk.

They are now in the midst of a more extensive study. Those results are expected to be released this spring, state officials said.

Residents wonder what they were exposed to before more stringent air standards came into effect during the past decade.

"What about those of us who have lived here since the 1940s and were breathing this stuff when it was a lot worse than it is even now?" Cloninger said.

"I hope the state and county are going to start taking some action. When they find a violation, they need to enforce it. If it means shutting one down, they ought to do it."

# Amoco reports diesel fuel spill at Paw Creek

C.O. 12-20

By JOHN HECHINGER  
Staff Writer

A fuel line ruptured over the weekend at the Amoco tank farm in Charlotte's Paw Creek neighborhood, spilling as much as 8,000 gallons of diesel fuel, the oil company said Monday.

Larry Williams, manager of Amoco's Paw Creek operations, said workers discovered the leak about 7 a.m. Sunday during a routine inspection.

Williams said none of the fuel left Amoco's property and nearly all had been recovered within 12 hours.

"It was contained from the word go," Williams said. "There was no threat of it

**“We want some action down here. If it takes shutting down every one of them, that's what should be done.”**

— Bob Cloninger, a community activist in Charlotte's Paw Creek neighborhood

leaving our property.”

\*Near the intersection of Freedom Drive and Old Mount Holly Road in northwest

Charlotte, 13 oil companies operate Paw Creek distribution centers, whose four-story tanks supply most of the fuel in the Charlotte region.

The tank farms have leaked at least 600,000 gallons of gasoline and other fuel since the 1960s. Residents fear fumes and leaks from the terminals could be causing health problems and hurting property values — something oil companies dispute.

This summer, oil companies pledged to notify neighbors about spills. On Sunday, Amoco delivered letters to 28 homes near their tank farm, telling them about the leak.

"We regret and apologize that this occurred," Williams wrote. "However, we are pleased that our safety and environmental-response systems worked as planned."

At the time, the company provided no estimate of the size of the spill, which Williams now believes to be 5,000 to 8,000 gallons.

Bob Cloninger, a leading community activist, said the neighborhood isn't reassured.

"We want some action down here," Cloninger said. "If it takes shutting down every one of them, that's what should be done."

The fuel leaked from a failed gasket in an above-ground line, about 3 inches in diameter. The three-year-old line takes fuel from a loading rack — where tanker trucks fill with fuel — and returns it to the terminal complex.

Williams said the fuel spilled into a containment ditch, with a protective plastic lining that keeps the leak from contaminating groundwater. Workers pumped fuel back into the tanks and will remove and replace tainted soil.

Cloninger and Williams said residents

Please see Fuel/page 5C

## Fuel

Continued from page 1C

had complained several times since Wednesday about foul odors from the Paw Creek terminals.

A county environmental official checked on the complaints, they said, but reported no problem. Officials from the Mecklenburg County Department of Environmental Protection couldn't be

reached Monday.

Williams said the gasket must have started leaking between Saturday evening and early Sunday morning, since Amoco inspects the terminal twice a day over the holidays. He said the line wasn't leaking earlier in the week.

The Amoco terminal has leaked twice before, state environmental records show. It spilled at least 100,000 gallons of gasoline in 1981 and 1,500 gallons of fuel oil in 1983.

Amoco waited at least a year to report the 1981 spill, though the

law required prompt notification. Then, after removing some of the gasoline, the company stopped most of its cleanup efforts in the 1980s. Last year, Amoco paid a \$27,700 fine after regulators said it missed a cleanup deadline.

Williams said Amoco had reported the weekend spill to local, state and federal authorities, as well as residents.

"We're not trying to hide anything," Williams said. "We're not trying to cover anything up. We want to be responsible operators in this area."

# Hunting safety a priority

The Triangle's elected officials need to consider new hunting regulations reflecting increased development in an area that used to be largely rural. Some progress has been made, but too much risk remains.

**I**f hunters will hold their knees for a moment — to stem the jerking that sometimes occurs whenever regulations are mentioned — they'll see the common sense in a suggestion that it's time for Wake County commissioners and their counterparts elsewhere in the Triangle to ponder new hunting rules.

That doesn't mean "gun control," in the dire way in which those words are viewed by the pro-gun lobby. It means, rather, that these officials need at least to put some new ideas on the table about how to improve gun safety for shooters and ordinary citizens alike. Wake, Orange and Durham counties are no boondocks, after all. Developments spring up, weed-like, all over the region now — a shopping center there, a housing development here.

Many such developments are on property roamed by hunters for generations. Old traditions, like habits, are hard to break, and that's led to some unsettling incidents for some of the folks who still proudly live, as they say, "out in the country."

Wake Commissioner Merrie Hedrick, for one, ran for office eight years ago because her dog had been accidentally shot by hunters and she feared her children might be in danger. A Tuesday story in The N&O offers anecdotal evidence that there is considerably more danger than there used to be.

During the gun-deer season — Nov. 15 to Jan. 1 — many folks who

live near hunting woods watch their kids and their pets closely, fearing stray bullets. Others have to tolerate the loud fire from high-powered deer rifles. Maybe that's no more than a nuisance, but when you're minding your own business on your own property, you ought not to have to worry about being shot. And there are always those hunters who make things worse by getting drunk and hunting illegally at night.

County commissioners and town board members, it's true, can't catch every rogue hunter themselves. But they can consider things to make these areas safer. Even with tree stands, now required in Wake, rifles are still a hazard that the region's more populated parts don't need. Why not limit hunting in those places to shotguns, which pose far less long-distance danger?

The area should also consider more no-hunting buffers around developments that are close to lands that customarily have been heavily hunted.

Hunters ought to be consulted on rules, of course. And it's true they perform a service of sorts in controlling the deer population. As it grows, so do hazards to motorists, for example — some of whom are hurt, even killed, in accidents involving deer.

Still, elected officialdom's first priority has been and must be citizen safety. It's time for a dialogue on what needs to be done to improve it.

## UP TO 8,000 GALLONS SPILLED

# Diesel fuel line breaks at Amoco tank farm in northwest Charlotte

Company officials downplay the accident, but a community activist says the distribution centers are a chronic problem.

THE ASSOCIATED PRESS

CHARLOTTE — A fuel line ruptured over the weekend at the Amoco tank farm in Charlotte, spilling up to 8,000 gallons of diesel fuel, the oil company said Monday.

Larry Williams, manager of Amoco's Paw Creek operations, said workers discovered the leak about 7 a.m. Sunday during a routine inspection. He said most of the fuel was recovered within 12 hours.

"There was no threat of it leaving our property," Williams said.

Located in northwest Charlotte, 13 oil companies operate Paw Creek distribution centers, whose four-story tanks supply most of the fuel in the Charlotte region.

The tank farms have leaked at least 600,000 gallons of gasoline and other fuel since the 1960s.

Residents fear fumes and leaks from the terminals could be causing health problems and hurting property values — something oil companies dispute.

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Photos by MARK WILSON

Near homes, a shopping center and a school in Fairfax, Va., Star Enterprise operates a complex of nine giant fuel storage tanks. Federal environmental official estimate that

200,000 gallons of diesel fuel, jet fuel and gasoline leaked from the complex and seeped under a subdivision of \$300,000 homes.

# When neighbors square off with big oil

Victims of tank farm leaks in Virginia fought back and won, bolstering hopes in Charlotte's Paw Creek.

By JOHN HECHINGER  
Staff Writer

**F**AIRFAX, Va. — Near his washer-dryer and a box of dog biscuits, an alarm hangs over the sewer grate in Russell Kamin's basement.

Twice, its wail shattered the peace of Kamin's split-level suburban home, once at 6 a.m. — false alarms, it turned out. "I've never seen kids get out of bed so fast," Kamin remembers. "It was complete panic."

Kamin, 57, a former FBI agent, isn't worried about crime. The basement's alarm warns his family about something else: the buildup of explosive gases near the flame of his furnace and water heater.



Kamin

Just outside Fairfax, a Virginia suburb 12 miles southwest of Washington, Kamin lives above an environmental disaster. It's a giant underground pool of diesel fuel, jet fuel and gasoline that seeped below 22 homes.

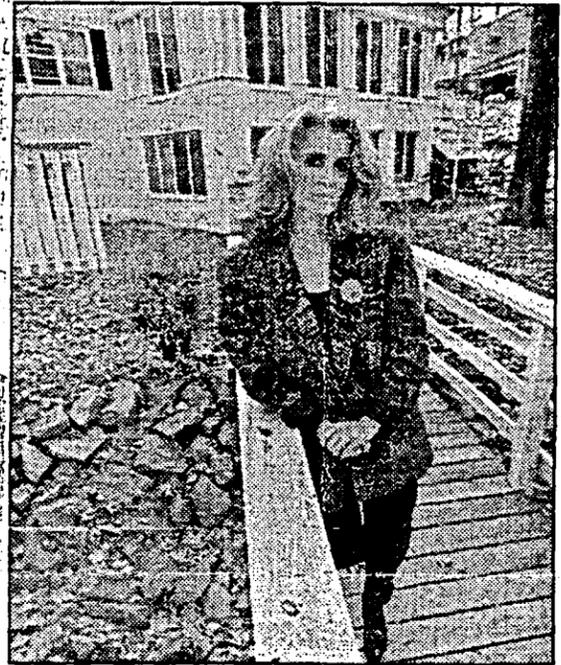
For three years, hundreds of families have cursed its source — huge oil-storage tanks owned by Star Enterprise, a joint venture between Texaco Inc. and a Saudi Arabian company.

Today, the Paw Creek neighborhood in northwest Charlotte is looking to Virginia for inspiration in its own struggle with oil companies.

This summer, residents discovered that a similar complex of fuel-storage tanks in their community leaked at least 600,000 gallons of gasoline and other fuel since the 1960s. Fuel still taints water deep underground.

The two regions have another bond. In their dispute with oil companies, they have hired the same lawyers, the Washington firm of Cohen, Milstein, Hausfeld & Toll.

Last fall, 200 families in Fairfax won what environmental groups call a precedent-setting victory. Star agreed to a \$50 million court settlement and a plan to protect property



In September 1990, Melinda O'Brien, now a leading community activist, discovered a purplish sheen of petroleum on the creek under this bridge behind her home. The problem was traced to Star Enterprise's fuel-storage tanks.

## A tale of two tank farms

	1965	1990*
Companies:	5	13
Petroleum storage capacity, millions of gallons	72.9	128.3
Annual fuel distribution, billions of gallons	1.1	1.4
Opened	1965	1940s
Reported spills	20**	27**
Reported gallons spilled	500,000*	600,000**

\*As of Dec. 1992 \*\* As of June 1993  
SOURCES: Virginia Governor's commission report, Mecklenburg County Department of Environmental Protection, N.C. Division of Environmental Management  
Staff graphic

Please see Leaks/page 7C

# Virginia case fuels hope in Paw Creek

## Leaks

Continued from page 1C

values that will cost the company tens of millions more.

Now, some 200 families in Charlotte are wondering if they could win a settlement, too.

Since the law firm started meeting with residents in September, lawyers have pored over public records in North Carolina to determine the spread of the contamination.

As homeowners complain they can't sell their houses, the firm has hired appraisers to examine the effect of leaks on property values.

Residents also worry that the tanks are causing cancer in the neighborhood. The law firm has hired an environmental engineer to study possible health risks from leaks and from fumes that could waft into the neighborhood.

Despite similarities to Fairfax, people in Paw Creek have a tougher case to make.

It's harder to assign blame. Thirteen firms operate in Paw Creek, on top of a hodgepodge of oil spills. In Virginia, Star was clearly at fault.

In Paw Creek, no one knows the full extent of the contamination. Oil companies and initial reports to N.C. environmental officials show that fuel has polluted only a handful of properties.

The two neighborhoods are 380 miles and a world apart.

The Fairfax community is a subdivision of \$300,000 houses, including the homes of a congressional lawyer, a retired rear admiral and a retired brigadier general.

Paw Creek is a more modest area of red-brick \$80,000 houses and postal, railroad and mill workers.

A working-class Charlotte neighborhood may find it more difficult to win a fight, Fairfax residents and environmental groups say.

"I pity anyone who isn't as affluent going through what we've gone through," Kamin said. "We knew what to do. We knew what our rights are. Texaco was stonewalling us every step of the way."

### Leaks are widespread

How the Charlotte dispute is resolved has powerful implications for the oil industry and for neighborhoods near oil tanks across the country.

Of the nation's 900,000 aging aboveground petroleum storage tanks, a quarter are leaking as tank bottoms and pipes corrode, according to a study by the New York-based Environmental Defense Fund.

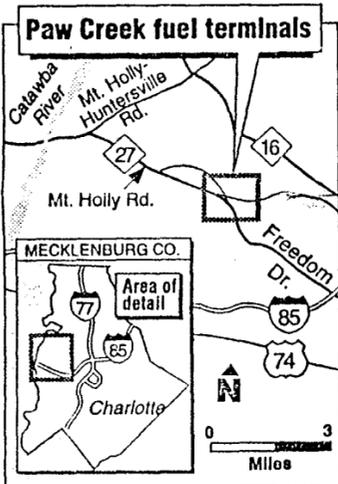
At least 40% of major petroleum distribution centers, such as those in Paw Creek and Fairfax, are sitting on underground pools of contamination — including tank farms in Greensboro, Selma, Wilmington and Spartanburg.

The study estimates the oil industry could face \$9.6 billion in claims for medical problems and property value damage from those tank farms — more than enough to wipe out the profits last year of Exxon, Chevron, Mobil and Texaco.

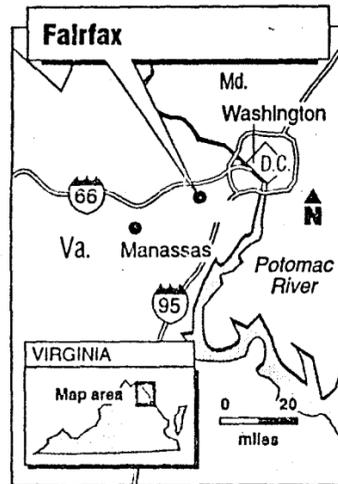
Lois Epstein, the engineer who authored the study, notes that



MARK WILSON



GEORGE BREISACHER/Staff



Knight-Ridder Tribune

community legal challenges are spreading across the country.

Last year, residents of a neighborhood near a tank farm in east Austin, Tex., and local officials pressured companies into relocating — something Fairfax residents are still trying to do.

"It's going to move from state to state as each of these disasters come to light," Epstein says.

### Sheen in creek was tip-off

The Mantua subdivision in Fairfax was once known for its block parties and communal dinners — as a refuge from the hassles of Washington. It's a neighborhood of winding lanes and cul-de-sacs, lined with stately colonial-style homes and 40-year-old oaks and maples.

Yet, the homes sit less than a quarter mile from fuel-storage tanks at the 114-acre Pickett Road tank farm. Gleaming white tanks peek over a department store and movie theater in a major shopping center.

At the tank farm, five companies — Star Enterprise, Chevron, Amoco, Citgo and Colonial Pipeline — can store nearly 73 million gallons of petroleum.

With tanker-trucks fueling up day and night, the terminal distrib-

utes 1 billion gallons of fuel a year, including 40% of the supply for metropolitan Washington. An underground pipeline starting in Houston — one of the same that supplies Paw Creek's tanks — provides the fuel.

Since 1965, the tank complex reported 20 leaks, spilling at least 500,000 gallons of fuel, according to a 1992 commission appointed by Virginia Gov. Douglas Wilder.

Until September 1990, however, most residents didn't have an inkling of the troubles next door.

After a resident discovered a sheen in a creek behind her house, county fire and rescue officials traced the problem into storm sewers — and then to the Star terminal.

People noticed sickly sweet odors and complained of breathing problems and headaches. They also worried about the long-term danger of exposure to cancer-causing chemicals in gasoline.

Star and the EPA say they have no evidence of a health risk, but the environmental agency says it plans to do a health assessment.

"It was unbelievable," said Jack Maskell, the congressional lawyer who led the neighborhood group. "It dominated our lives."

"You go to a gas station, and

Even after the community won a settlement worth tens of millions, Kathleen McBride is still fighting to move the tank farm near her home. McBride, her husband, Bill, and their two children worry about the long-term health effects of exposure to cancer-causing chemicals in petroleum — a concern Star Enterprise says is unfounded. "Of course you can't prove anything," she said. "It's really hard to prove that you have health problems. We could all get cancer 20 years from now and die. Sometimes I think about it. What are you going to do?"

there's a sign, 'Do not inhale fumes. Can cause cancer in laboratory animals.' Then we go home, and it smells worse than a gas station. We were very, very frightened."

Even now, Star says it doesn't know how the fuel leaked from its tanks. The company believes petroleum could have leaked slowly for years, perhaps from a loading area. Federal environmental officials estimate 200,000 gallons seeped into the ground.

Over the next two years, company and government workers tore up streets, dug wells and installed an elaborate underground petroleum-recovery system along two major streets.

Officials slowly discovered the dimensions of the problem: In places, the pool of jet fuel, diesel fuel and gasoline was as much as 7 feet deep.

Nearly half a mile long, the width of 1½ football fields, the contamination covers 18 acres underneath 22 houses.

Star has spent \$42 million on the spill. The U.S. Environmental Protection Agency expects clean-up to take a decade or more.

"We immediately assumed full responsibility for the spill," Star spokesman Shawn Frederick said.

"We have since engaged in a very aggressive clean-up effort."

### Given a few minutes to pack

For almost a year, blue-uniformed men from the Fairfax County fire and rescue department knocked on doors of scores of houses at dinner time every Thursday night.

They brought with them a portable flammable vapor detector, which they used to see if explosive fumes had reached dangerous levels in the basements of any homes.

In March 1992, the department installed detectors in 22 homes closest to the contamination.

Fire officials said the mixture of diesel, jet fuel and gasoline had a low ignition point, less than 72 degrees — meaning it could explode under typical outdoor conditions in the spring, summer or fall.

In April 1992, officials drilled a test well and found petroleum 3 feet from Fred McDavid's basement.

McDavid is a mechanical engineer born in Sanford who worked in Charlotte in the 1950s. When he returned home at 5:30 p.m. April 2, a man from the county fire department was at his door.

"You've gotta leave," the man said. "We'll give you a few minutes to pack a suitcase. But you need to do it quick."

McDavid and his family threw some clothes into suitcases and left in less than 10 minutes.

Over the next month, county officials evacuated four families, including McDavid.

"We were broken-hearted," said McDavid, now 68. "We had lived there 27 years. I even said to the man from the EPA, 'Do you have any idea how long it took me to pay for that house?'"



McDavid

### Organization pays off

Meanwhile, hundreds of residents formed a group called Citizens for a Healthy Fairfax. Soon after the spill was first discovered, Maskell called another neighbor in the Mantua subdivision: Michael Hausfeld, a lawyer who lives a block away from the contamination.

Maskell knew Hausfeld spends much of his time representing Native Americans suing Exxon over the 1989 Valdez spill in Alaska's Prince William Sound.

In September 1991, about 50 families sued Star, and 150 more later joined. The suit accused the company of damaging property and threatening the health and safety of residents.

A year later, Star agreed to pay \$50 million to 101 families for the disruption to their lives and other claims.

Another part of the settlement could compensate more than 400 homeowners within half a mile of the tank farm.

Under the settlement, Star agreed to buy about 50 homes closest to the contamination at full price — as if they were in a comparable neighborhood without oil contamination.

Star also said it would protect the value of other homes for a decade, offering a minimum price to people who couldn't sell their homes after six months on the market. Hausfeld said the agreement covers \$150 million worth of property.

Already, the company has bought 75 houses for \$280,000 to \$300,000 apiece.

"You can't help but think Star Enterprise did right by these people," Star's Frederick said.

Still, residents are angry. They've pushed for — and won — tighter state environmental law for the largely unregulated aboveground storage tanks. They've also fought for federal legislation, now pending in Congress.

In Fairfax, activists say they wouldn't have won these victories if the community hadn't organized and sued.

"We believed nobody is going to help you," said Melinda O'Brian who first reported the sheen of oil in a creek behind her house. "You've got to help yourself. The politicians won't help you. The regulators won't help you. The companies certainly won't help you. Believe me, nobody will."

### Paw Creek loads 'slingshot'

In Charlotte, Bob Cloninger, retired railroad clerk and lead Paw Creek activist, said the companies will have to take no now that the community has hired the Washington law firm.

"The oil companies won't see the problem," Cloninger said. "They figured we couldn't take them to court. This puts us up a notch. They'll begin to listen. They're saying, 'Hey, these guys are serious.'"

Still, oil companies say people in Paw Creek shouldn't see any parallels to Virginia.

"We don't think there's any comparison at all," said Bill Huntington, a spokesman for Amoco, with storage tanks in both Fairfax and Paw Creek.

"In Fairfax, you have a major leak into a neighborhood. In Charlotte, you have extremely limited off-site contamination."

Even if the contamination hasn't seeped into much of the neighborhood, residents' lawyer Hausfeld said, it could still be hurting property values. People fear that contamination could spread, he said, or the tanks could leak again.

Meanwhile, he said, no one has enough information about the problem to determine its impact on the neighborhood's health. The law firm doesn't expect to decide about legal action before January.

Bill Weatherspoon, executive director of the N.C. Petroleum Council, said residents would be better served sitting down and talking directly with oil companies — in a forum called the Paw Creek Roundtable.

Hausfeld disagrees. "To me, one of the most egregious aspects of Paw Creek is the idea of the oil companies forming a council and saying, 'Deal with us. We'll respond rationally,'" Hausfeld said.

"To me, it's like Goliath saying to David, 'Put down your slingshot and let's fight fair.' To say that 13 multinational, multibillion-dollar oil companies are on a par with the innocent victims and residents of Paw Creek — it defies reality."

SITE HEALTH AND SAFETY PLAN

A. General Information

Site Name Old Mt. Holly Road ID # NCD 986 172 518

Location 7911 Old Mt. Holly Road, Charlotte,  
Mecklenburg County, NC 28214

Proposed Date of Investigation November 30 - December 2, 1993

Date of Briefing November 29, 1993

Date of Debriefing December 3, 1993

Nature of Visit (check one): On-Site Reconnaissance \_\_\_\_\_  
Off-Site Reconnaissance \_\_\_\_\_  
Sampling X  
Remediation Overview \_\_\_\_\_

Health Department Official Contacted Ms. Francis Duncan for John Gibson

Date of Contact November 10, 1993

Site Investigation Team: All site personnel have read the Site Health and Safety Plan and are familiar with its provisions.

	<u>Personnel</u>	<u>Responsibilities</u>	<u>Signature</u>
Team 1	<u>Jeanette Stanley</u>	<u>team leader, sampling</u>	<u>Jeanette Stanley</u>
Team 1	<u>Pat DeRosa</u>	<u>sampling</u>	<u>Pat DeRosa</u>
Team 2	<u>Harry Zinn</u>	<u>sampling</u>	<u>Harry Zinn</u>
Team 2	<u>Doug Rumford</u>	<u>sampling</u>	<u>Doug Rumford</u>
Team 3	<u>Grover Nicholson</u>	<u>sampling</u>	<u>Grover Nicholson</u>
Team 3	<u>Stuart Parker</u>	<u>sampling</u>	<u>Stuart Parker</u>

Plan Preparation:

Prepared By: David Lilley, Industrial Hygiene Consultant

Reviewed By: Jack Butler, Environmental Engineering Supervisor

David B. Lilley  
Jack Butler

**B. SITE/WASTE CHARACTERISTICS**

Waste Type(s)  Liquid  Solid  Sludge  Gas  
 Characteristics  Corrosive  Ignitable  Radioactive  
 Volatile  Toxic  Reactive  Other

List Known or Suspected Hazards (physical, chemical biological or radioactive) on Site and their toxicological effects. Also, if known, list chemical amounts

HAZARD	WARNING PROPERTIES	EXPOSURE LIMIT
<u>Tetrachloroethylene</u>	<u>Odor Threshold (OT) = 4.68 - 50 ppm</u>	<u>25 ppm</u>
<u>Trichloroethylene</u>	<u>OT = 0.2 - 400 ppm</u>	<u>50 ppm</u>
<u>1,2-Dichloroethylene</u>	<u>OT = 0.085 - 500 ppm</u>	<u>200 ppm</u>
<u>Benzene</u>	<u>1.4 - 85 ppm</u>	<u>10 ppm</u>
<u>Ethylbenzene</u>	<u>0.25 - 200 ppm</u>	<u>100 ppm</u>
<u>Toluene</u>	<u>0.17 - 40 ppm</u>	<u>100 ppm</u>
<u> </u>	<u> </u>	<u> </u>

**UNDERGROUND UTILITIES CHECKLIST**

<u>Utility</u>	<u>Locator/Contact Person</u>	<u>Phone #</u>	<u>Date of Location</u>
Power	<u>ULOCO</u>	<u>1-800-632-4949</u>	<u>Nov. 26, 1993</u>
Telephone	<u>see above</u>	<u> </u>	<u>Nov. 26, 1993</u>
Gas	<u>see above</u>	<u> </u>	<u>Nov. 26, 1993</u>
Water	<u>CMUD</u>	<u>704-336-2564</u>	<u>Nov. 26, 1993</u>
Sewer	<u>James Berry</u>	<u>704-357-6064</u>	<u>Nov. 26, 1993</u>

Work Number:

Call made by: Jeanette Stanley

Facility Description: Size unknown Buildings yes  
Disposal Methods Being Investigated Unknown: reportedly, there is a dry cleaner, a gas station, and tank farms in the immediate area.  
Unusual Features on Site (dike integrity, power lines, terrain, etc.):  
none known

History of the Site: In April of 1990, NC Superfund received lab data and a site map for a contaminated well belonging to Naomi Sogner in Paw Creek. The info was sent by the Mecklenburg County Environmental Protection Agency. The well was contaminated with the compounds listed on page 2. Ms. Stogner is currently using bottled water.

#### C. HAZARD EVALUATION

The site can be toured and sampled in level D protection. PE or PVC gloves will be worn while collecting water, soil, and sediment samples, nitrile gloves under PE or PVC gloves will be worn if discolored soil, sediment, or sludge is encountered. The OVA or HNU will be used to monitor breathing zone air while auguring. If readings on the more sensitive instrument exceed 5 mu in the breathing zone, stand upwind of the auger hole until vapor concentrations fall below 5 mu. If vapor concentrations do not fall below 5 mu within 15 minutes, fill in that hole and evacuate that area. The OVA or HNU will also be used to monitor breathing zone air when uncapping and bailing monitoring wells. If readings exceed 5 mu in the breathing zone when uncapping or bailing, stand upwind of the well until vapor concentrations fall below 5 mu. If vapor concentrations do not fall below 5 mu within 15 minutes, close that well and evacuate the area. The combustible gas monitor (CGM) will be used on auger holes and monitoring wells that are suspect of being highly contaminated. If headspace samples are less than 10% LEL, work may proceed as usual; 10% - 20%, work may continue with extreme caution and continuous monitoring; at 20%, evacuate that area immediately.

Tyvek suits (saranex in wet conditions) will be worn by the person doing the augering and bailing. Steel toed work boots will be worn while conducting tour, augering, or sampling.

Personal Protective Equipment/Level of Protection:      C   X   D

Modifications While sampling potentially contaminated media, there is the possibility of direct contact with or an air release of chemicals that may endanger people in the immediate area. For this reason, only North Carolina Division of Solid Waste Management, Superfund Section employees and contractors necessary for sample collection will be allowed in the exclusion zone. These employees have satisfactorily completed the training and medical monitoring requirements set forth in 29 CFR 1910.120, and are properly trained in the procedures to follow in case of an emergency. The boundaries of the exclusion zone are shown on the map on the following page. Onlookers will be allowed to observe from outside the exclusion zone, which will be delineated with barrier tape. In the event unauthorized personnel enter the delineated area while sampling is taking place, sampling will stop immediately and will not resume until all unauthorized personnel have left the exclusion zone. If onlookers observe sampling operations from within the brick building located on-site, doors, windows, and louvers (except the entrance/exit door on the east side of the building) will remain closed during sampling operations. Onlookers will not be permitted between Freedom Drive and the property on the west side of the site.

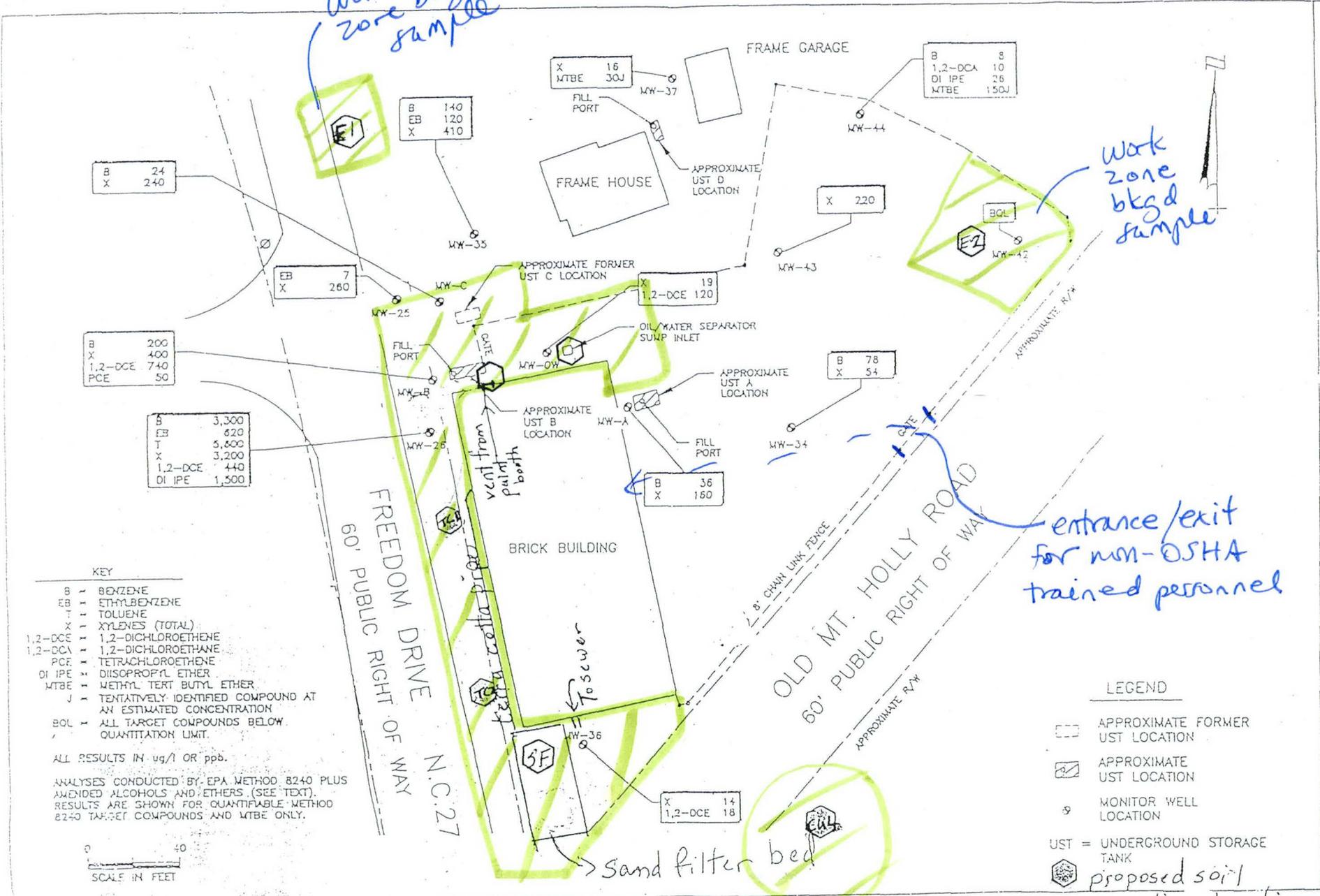
For background samples, onlookers will remain at least 15 feet from the sampling crew in order to avoid being physical hazards, such as being accidently struck with an auger.

*work bkgd zone sample*

*work zone bkgd sample*

*entrance/exit for non-OSHA trained personnel*

*sand filter bed*



B	24
X	240

B	140
EB	120
X	410

X	16
MTBE	30J

B	8
1,2-DCA	10
DI IPE	26
MTBE	150J

X	220
---	-----

EB	7
X	260

X	19
1,2-DCE	120

B	200
X	400
1,2-DCE	740
PCE	50

B	78
X	54

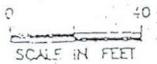
B	3,300
EB	620
T	5,600
X	3,200
1,2-DCE	440
DI IPE	1,500

B	36
X	160

X	14
1,2-DCE	18

- KEY
- B - BENZENE
  - EB - ETHYLBENZENE
  - T - TOLUENE
  - X - XYLENES (TOTAL)
  - 1,2-DCE - 1,2-DICHLOROETHENE
  - 1,2-DCA - 1,2-DICHLOROETHANE
  - PCE - TETRACHLOROETHENE
  - DI IPE - DIISOPROPYL ETHER
  - MTBE - METHYL TERT BUTYL ETHER
  - J - TENTATIVELY IDENTIFIED COMPOUND AT AN ESTIMATED CONCENTRATION
  - BOL - ALL TARGET COMPOUNDS BELOW QUANTITATION LIMIT

ALL RESULTS IN ug/l OR ppb.  
 ANALYSES CONDUCTED BY EPA METHOD 8240 PLUS AMENDED ALCOHOLS AND ETHERS (SEE TEXT). RESULTS ARE SHOWN FOR QUANTIFIABLE METHOD 8240 TARGET COMPOUNDS AND MTBE ONLY.



- LEGEND
- APPROXIMATE FORMER UST LOCATION
  - APPROXIMATE UST LOCATION
  - MONITOR WELL LOCATION
  - UST = UNDERGROUND STORAGE TANK
  - proposed soil sampling locations

ERM-SOUTHEAST, INC. CHARLOTTE, NC  
 FIGURE 5 RESULTS OF VOLATILE ORGANIC ANALYSES OF GROUND WATER SAMPLES COLLECTED 6/19/01 - 6/20/01.  
 PORTION OF PROPERTY OF CASTLES AUTO AND TRUCK SERVICE, INC. CHARLOTTE, NORTH CAROLINA

Modifications Wear goggles, face shield, and PVC gloves while preparing acid preserved samples, goggles and PVC gloves while collecting acid preserved samples. Avoid breathing acid vapors. Rinse pipetts with deionized water before disposing of in trash bag.

Surveillance Equipment:

<u>  X  </u> HNU	<u>          </u> Detector Tubes and Pumps
<u>  X  </u> OVA	<u>          </u> O2 Meter
<u>          </u> Explosimeter	<u>          </u> Radiation Monitor

Decontamination Procedures

           Level C   Respirator wash, respirator removal, suit wash (if needed), suit removal, boot wash, boot removal and glove removal.

  X   Level D   Boot wash and rinse and boot removal, suit removal, glove and goggle removal.

Work Schedule/Visit Objectives The purpose of this visit is to determine if the site poses a threat to the public health or environment because of releases of contaminants to soil, surface water, groundwater, or air. Sampling may consist of groundwater, surface water, surface soil, subsurface soil, and sediment sampling.

EMERGENCY PRECAUTIONS

<u>Route of Exposure</u>	<u>First Aid</u>
<u>Eyes</u>	<u>irrigate immediatly</u>
<u>Skin</u>	<u>soap and water wash</u>
<u>Inhalation</u>	<u>fresh air and artificial respiration</u>
<u>Ingestion</u>	<u>get medical attention immediatly</u>

ID # NCD 986 172 518

Location of Nearest Phone: unknown (nearby residences?)

Hospital (Address and Phone Number)

Mercy Hospital, 2001 Vail Avenue, Charlotte, NC 28207 (704) 379-5000

can handle chemically contaminated patients

Emergency Transportation Systems (Phone Numbers)

Fire 911

Ambulance 911

Rescue Squad 911

Emergency Route to Hospital Take a right onto Route 27 (Thrift Road) and travel south into Charlotte. Stay on route 27 into downtown Charlotte and exit onto Route 16 East. Take a right onto Queens Road, a left onto Randolph Road, then a left onto Caswell Road. The hospital will be on the right.

PREVAILING WEATHER CONDITIONS AND FORECAST \_\_\_\_\_

**EQUIPMENT CHECKLIST**

_____ Air purifying respirator	<u>X</u> First Aid Kit
_____ Cartridges for respirator	<u>X</u> 3 gal. Deionized H2O
_____ Dust Mask	<u>X</u> Rainsuit
_____ O <sub>2</sub> Indicator	<u>X</u> Gloves ( <u>PE/PVC/nitrile/cloth</u> )
<u>X</u> Eye Wash Unit	<u>X</u> Boots/Boot Covers
<u>X</u> H NU	<u>X</u> Coveralls ( <u>tyvek/saranex</u> )
<u>X</u> OVA	<u>X</u> Eye Protection
_____ Explosimeter	<u>X</u> Hard Hat
_____ Radiation Monitor	<u>X</u> Decontamination
_____ Detector Tubes and Pump	Materials.

Poison Control Center - State Coordinator

Duke University Medical Center

Telephone: 1-800-672-1697

Box 3024

Durham, NC 27710

ASHEVILLE 704-255-4490	Western NC Poison Control Center Memorial Mission Hosp. 509 Biltmore Ave. 28801	HENDERSONVILLE 704-693-6522 Ext. 555,556	Margaret R. Pardee Memorial Hospital Fleming St., 28739
CHARLOTTE 704-379-5827	Mercy Hospital 2001 Vail Ave, 28207	HICKORY 704-322-6649	Catawba Mem. Hosp. Fairgrove Chur. Rd 28601
DURHAM 1-800-672-1697	Duke Univ. Med. Center Box 3007, 27710	JACKSONVILLE 919-577-2555	Onslow Mem. Hospital Western Blvd. 28540
GREENSBORO 919-379-4105	Moses Cone Hospital 1200 N. Elm St. 27420	WILMINGTON 919-343-7046	New Hanover Mem. Hospital 2131 S. 17th St. 28401

TO BE COMPLETED BY PROJECT MANAGER

PROJECT MANAGER: Jeanette Stanley PROJECT: Old Mt Holly Rd PCE  
INVESTIGATION DATE: Nov 30 - Dec 2, 1993  
RECONNAISSANCE \_\_\_\_\_ SAMPLING VISIT X REMEDIATION OVERVIEW \_\_\_\_\_

Materials Used (Please insert a number in the blank)

_____ Air Purifying respirator cartridges	_____ Gloves (nitrile)
_____ Eye Wash Units	_____ Gloves (cloth)
_____ First Aid Kit	_____ Boot covers
_____ Gloves (polyethylene)	_____ Coveralls (tyvek)
_____ Gloves (PVC)	_____ Coveralls (saranex)

Respirator Worn By	Approximate Time in Respirator
_____	_____
_____	_____
_____	_____

Air Monitoring Data (Include Calibration Reading)

HNU: \_\_\_\_\_

OVA: \_\_\_\_\_

Explosimeter: \_\_\_\_\_

Radiation Meter: \_\_\_\_\_

Were there any injuries? \_\_\_\_\_ If yes, explain: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If the maximum personal protective equipment as outlined in the Hazard Evaluation Section was not used, please justify:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

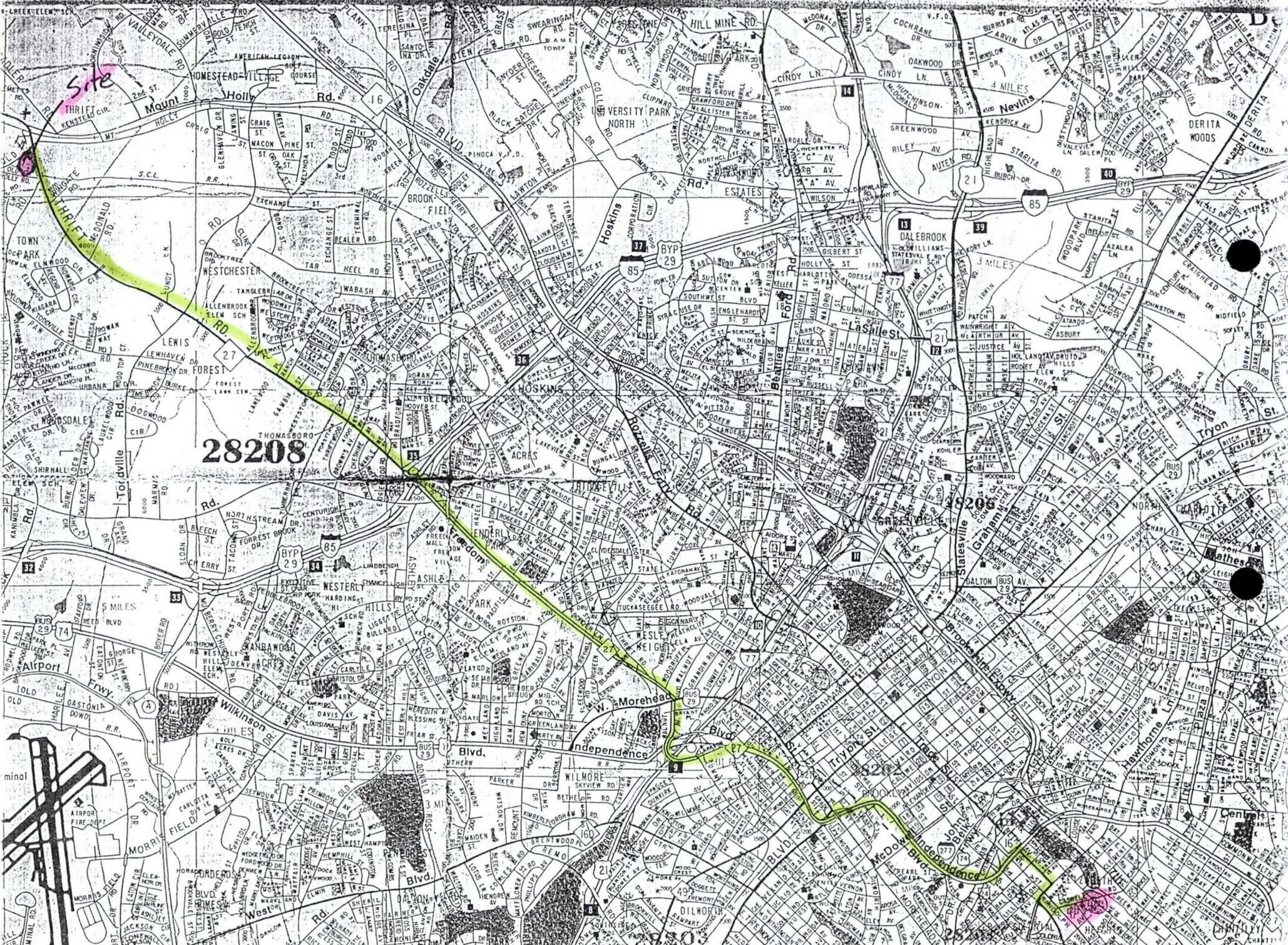
Visitors Present

Organization Represented

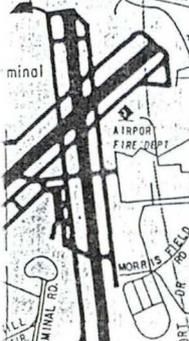
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature



28208



minol

## HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Perchloroethylene

## I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula <u>C<sub>2</sub> Cl<sub>4</sub></u>	<u>1</u>
Natural Physical State at 25°C <u>liquid</u>	<u>2</u>
Vapor Pressure <u>14</u> mm Hg at 20°C	<u>2</u>
Melting Point <u>-8</u> °F/°C Boiling Point <u>250</u> °F/°C	<u>2</u>
Flash Point (open or closed cup) <u>N/A</u> °C/°F	<u>2</u>
Solubility - H <sub>2</sub> O <u>0.015%</u>	<u>2</u>
Other <u>misc with alcohol, ether, chloroform,</u> <u>benzene.</u>	<u>1</u>

Physical Features: (odor, color, etc.) colorless liquid with an odor like ether or chloroform IP=9.32 eV (2) OVA Relative Response = 70%

## II. TOXICOLOGICAL DATA

Standards: 50 ppm(3) TLV 25 ppm(4) PEL suspect human carcinogen IDLH 2Routes of Exposure: Inhalation, Ingestion, Skin and/or Eye Contact (2)Acute/Chronic Symptoms: Irritation of eyes, nose, and throat, nausea, flushed face and neck, vertigo, dizziness, incoordination, headache, carcinogen (2)First Aid: Inhalation: artificial respiration; Ingestion: get medical attention immediately; Eye contact: irrigate immediately; Skin contact: soap and water wash immediately

Chemical Name: Perchloroethylene

III. HAZARDOUS CHARACTERISTICS

Reference

A. Combustibility Yes  No  2  
Toxic by-products \_\_\_\_\_  
\_\_\_\_\_

B. Flammability LEL none UEL none 2

C. Reactivity Hazard Incompatible with strong oxidizers, chemically active metals, such as barium, lithium, and beryllium 2

D. Corrosivity Hazard yes/no pH: \_\_\_\_\_

Neutralizing agent: \_\_\_\_\_

E. Radioactive Hazard	Exposure Rate	
Background yes/no	_____	_____
Alpha particles yes/no	_____	_____
Beta particles yes/no	_____	_____
Gamma radiation yes/no	_____	_____

IV. REFERENCES

1. The Merck Index, 11th Edition, 1989
2. NIOSH Pocket Guide to Chemical Hazards, 1987
3. Threshold Limit Values and Biological Exposure Indices for 1990-91, ACGIH.
4. CFR 1910.1000.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Trichloroethylene

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula <u>C<sub>2</sub> HCl<sub>3</sub></u>	<u>1</u>
Natural Physical State at 25°C <u>liquid</u>	<u>1</u>
Vapor Pressure <u>58</u> mm Hg at 20°C	<u>2</u>
Melting Point <u>-123</u> °F/°C Boiling Point <u>188</u> °F/°C	<u>2</u>
Flash Point (open or closed cup) <u>32</u> °C/°F	<u>3</u>
Solubility - H <sub>2</sub> O <u>0.1%</u>	<u>2</u>
Other <u>Ether, alcohol, chloroform</u>	<u>1</u>

Physical Features: (odor, color, etc.) Colorless liquid (unless dyed) with a sweet odor like chloroform 1P = 9.47 eV (2)

OVA Relative Response = 70%

II. TOXICOLOGICAL DATA

potential

human

Standards: 50 ppm (4) TLV 50 ppm (5) PEL carcinogen(2) IDLH

Routes of Exposure: Inhalation, ingestion, skin and/or eye contact (2)

Acute/Chronic Symptoms: Acute: Headache, vertigo, visual disturbance, tremors, drowsiness, nausea, vomiting, eye irritation, dermatitis, irregular heartbeat, skin irritation; chronic: carcinogenic (2)

First Aid: Inhalation: artificial respiration; Ingestion: get medical attention immediately; Eye contact: irrigate immediately; Skin contact: soap and water wash immediately

Chemical Name: Trichlorethylene

III. HAZARDOUS CHARACTERISTICS

Reference

A. Combustibility Yes X No      2  
Toxic by-products                       
  

B. Flammability LEL 12.5% UEL 90% 3

C. Reactivity Hazard Incompatible with strong caustics: 2  
when acidic reacts with aluminum, chemically active metals,  
barium, lithium, sodium, magnesium, titanium.

D. Corrosivity Hazard yes/no pH:             

Neutralizing agent:   

E. Radioactive Hazard	Exposure Rate	
Background yes/no	<u>                    </u>	<u>                    </u>
Alpha particles yes/no	<u>                    </u>	<u>                    </u>
Beta particles yes/no	<u>                    </u>	<u>                    </u>
Gamma radiation yes/no	<u>                    </u>	<u>                    </u>

IV. REFERENCES

(1) The Merck Index, 11th Edition, 1989  
(2) Pocket Guide to Chemical Hazards, NIOSH, 1987  
(3) Chemical and Engineering News, December 12, 1988.  
(4) Threshold Limit Values and Biological Exposure  
Indices for 1990-1991, ACGIH  
(5) 29 CFR 1910.1000

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: 1,2-Dichloroethylene

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula <u><math>C_2H_2Cl_2</math></u>	<u>1</u>
Natural Physical State at 25°C <u>liquid</u>	<u>2</u>
Vapor Pressure <u>180-265</u> mm Hg at 20°C	<u>3</u>
Melting Point <u>-56 to -115</u> °F/°C Boiling Point <u>113 to 140</u> °F/°C	<u>3</u>
Flash Point (open or closed cup) <u>36 - 39</u> °C/°F	<u>3</u>
Solubility - H <sub>2</sub> O <u>0.35 to 0.63%</u>	<u>3</u>
Other <u>alcohol, ether, most organic solvents</u>	<u>2</u>

Physical Features: (odor, color, etc.) Colorless liquid with an ether-like slightly acrid odor, like chloroform (3) IP = 9.65 eV

OVA Relative Response = 50%

II. TOXICOLOGICAL DATA

Standards: 200ppm (4) TLV      200 ppm (5) PEL      4,000ppm (3) IDLH

Routes of Exposure: Ingestion, Inhalation, Eye and/or skin contact

Acute/Chronic Symptoms: Irritation of the eyes and respiratory system, central nervous system depression (3)

First Aid: Inhalation: artificial respiration; Ingestion: get medical attention immediately; Eye contact: irrigate immediately; Skin contact: soap and water wash immediately

Chemical Name: 1,2-Dichloroethylene

III. HAZARDOUS CHARACTERISTICS

Reference

- A. Combustibility Yes X No \_\_\_\_\_ 6  
Toxic by-products phosgene and 6  
HCl formation \_\_\_\_\_
- B. Flammability LEL 9.7% UEL 12.8% 6
- C. Reactivity Hazard Not reactive with common materials 6
- D. Corrosivity Hazard yes/no pH: \_\_\_\_\_
- Neutralizing agent: \_\_\_\_\_
- E. Radioactive Hazard Exposure Rate
- |                 |        |       |       |
|-----------------|--------|-------|-------|
| Background      | yes/no | _____ | _____ |
| Alpha particles | yes/no | _____ | _____ |
| Beta particles  | yes/no | _____ | _____ |
| Gamma radiation | yes/no | _____ | _____ |

IV. REFERENCES

1. The Condensed Chemical Dictionary, Sax, 11th Edition, 1987.
2. The Merck Index, 11th Edition, Sax, 1989.
3. Pocket Guide to Chemical Hazards, NIOSH, 1987.
4. Threshold Limit Values and Biological Exposure Indices for 1990-1991, ACGIH.
5. 29 CFR 1910.1000.
6. Chemical Hazard Response Information System, US Department of Transportation, 1987.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Benzene

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula <u>C6 H6</u>	<u>1,2</u>
Natural Physical State at 25°C <u>liquid</u>	<u>1,2</u>
Vapor Pressure <u>75</u> mm Hg at 20°C	<u>1,2</u>
Melting Point <u>42</u> °F/°C Boiling Point <u>80</u> °F/°C	<u>1,2</u>
Flash Point (open or <u>closed cup</u> ) <u>12</u> °C/°F	<u>1,2</u>
Solubility - H <sub>2</sub> O <u>0.18%</u>	<u>2</u>
Other <u>in alcohol, Acetone Ether</u>	<u>1</u>

Physical Features: (odor, color, etc.) colorless liquid with odor of aromatic hydrocarbons IP = 9.24 eV. Relative response on HNU = 10  
Relative Response on OVA = 150%

II. TOXICOLOGICAL DATA

Standards: 10 ppm (3) TLV 10 ppm (4) PEL potential human carcinogen IDLH 2

Routes of Exposure: inhalation, ingestion, skin contact, eye contact

Acute/Chronic Symptoms: Upper respiratory irritation, muscle spasms, slow pulse, irritated eyes and skin burns, suspect human carcinogen. (1)

First Aid: Inhalation: artificial respiration; Ingestion: get medical attention immediately; Eye contact: irrigate immediately; Skin contact: soap and water wash immediately

Chemical Name: Benzene

III. HAZARDOUS CHARACTERISTICS

Reference

A. Combustibility Yes X No      2       
Toxic by-products not pertinent 5     

B. Flammability LEL 1.3% UEL 7.1% 2     

C. Reactivity Hazard Strong oxidizer, chlorine 2     

---

D. Corrosivity Hazard yes/no pH:          

Neutralizing agent:          

E. Radioactive Hazard	Exposure Rate	
Background <u>yes/no</u>	<u>    </u>	<u>    </u>
Alpha particles <u>yes/no</u>	<u>    </u>	<u>    </u>
Beta particles <u>yes/no</u>	<u>    </u>	<u>    </u>
Gamma radiation <u>yes/no</u>	<u>    </u>	<u>    </u>

IV. REFERENCES

- (1) Documentation of the TLV's, 4th Edition, 1980
- (2) Pocket Guide to Chemical Hazards, NIOSH, 1987
- (3) Threshold Limit Values and Biological Indices for  
1991-1992, ACGIH.
- (4) CFR 1910.1000.
- (5) Chemical Hazard Response Information System, US Coast  
Guard, 1985.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Ethyl Benzene

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula <u>C8 H10</u>	<u>1,2</u>
Natural Physical State at 25°C <u>liquid</u>	<u>1,2</u>
Vapor Pressure <u>10</u> mm Hg at 79°F	<u>2</u>
Melting Point <u>-139</u> °F/°C Boiling Point <u>277</u> °F/°C	<u>1</u>
Flash Point (open or <u>closed cup</u> ) <u>59-64</u> °C/°F	<u>1,2</u>
Solubility - H <sub>2</sub> O <u>0.01%</u>	<u>2</u>
Other <u>miscible with usual organic solvents</u>	<u>1</u>

Physical Features: (odor, color, etc.) colorless, flammable liquid  
with an aromatic odor. IP = 8.76 eV Relative Response OVA = 100%

II. TOXICOLOGICAL DATA

Standards: 100 ppm (3) TLV 100 ppm (4) PEL 2000 ppm IDLH 2

Routes of Exposure: Inhalation, Ingestion, Skin/Eye contact

Acute/Chronic Symptoms: Irritation of the eyes and mucus membranes, headache,  
skin problems, sleepiness, coma (2)

First Aid: Inhalation: artificial respiration; Ingestion: get medical  
attention immediately; Eye contact: irrigate immediately; Skin contact:  
soap and water wash immediately

Chemical Name: Ethyl Benzene

III. HAZARDOUS CHARACTERISTICS

Reference

A. Combustibility Yes X No      2  
Toxic by-products none known       
         

B. Flammability LEL 1.0% UEL 6.7% 2

C. Reactivity Hazard Strong oxidizers 2

D. Corrosivity Hazard yes/no pH:          

Neutralizing agent:          

E. Radioactive Hazard		Exposure Rate	
Background	yes/ <u>no</u>	<u>    </u>	<u>    </u>
Alpha particles	yes/ <u>no</u>	<u>    </u>	<u>    </u>
Beta particles	yes/ <u>no</u>	<u>    </u>	<u>    </u>
Gamma radiation	yes/ <u>no</u>	<u>    </u>	<u>    </u>

IV. REFERENCES

- (1) The Merck Index, 11th Edition, 1989
- (2) Pocket Guide to Chemical Hazards, NIOSH 1990
- (3) Threshold Limit Values and Biological Exposure Indices  
for 1991-92, ACGIH.
- (4) 29 CFR 1910.1000.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Toluene (Methyl benzene, toluol)

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula <u>C7H8</u>	<u>1,2,3,4</u>
Natural Physical State at 25°C <u>liquid</u>	<u>1,2,3,4</u>
Vapor Pressure <u>20</u> mm Hg at 20°C	<u>3</u>
Melting Point <u>-95</u> °F/°C Boiling Point <u>110.6</u> °F/°C	<u>1,3,4</u>
Flash Point (open or closed cup) <u>40</u> °C/°F	<u>1,2,3,4</u>
Solubility - H <sub>2</sub> O <u>slightly soluble</u>	<u>1,3,4</u>
Other <u>miscible with alcohol, chloroform,</u>	<u>1,3,4</u>
<u>ether, acetone, glacial acetic acid, carbon disulfide</u>	

Physical Features: (odor, color, etc.) colorless liquid with an aromatic odor, IP 8.82 eV, (3) derived from coal tar oil or petroleum  
 Relative response on HNU = 10

II. TOXICOLOGICAL DATA

Standards: 100 ppm (5) TLV 100 ppm (6) PEL 2000 ppm IDLH 4

Routes of Exposure: inhalation; ingestion, skin contact, eye contact

Acute/Chronic Symptoms: Narcotic in high concentrations, headache, lassitude, and nausea. Chronic: anemia and dermatitis. (2)

First Aid: Inhalation: artificial respiration; Ingestion: get medical attention immediately; Eye contact: irrigate immediately; Skin contact: soap and water wash immediately

Chemical Name: Toluene

III. HAZARDOUS CHARACTERISTICS

Reference

A. Combustibility Yes X No      4  
Toxic by-products                       
  

B. Flammability LEL 1.0% UEL 7.0% 4

C. Reactivity Hazard strong oxidizers 3

D. Corrosivity Hazard yes/no pH:           

Neutralizing agent:   

E. Radioactive Hazard		Exposure Rate	
Background	yes/ <u>no</u>	<u>                    </u>	<u>                    </u>
Alpha particles	yes/ <u>no</u>	<u>                    </u>	<u>                    </u>
Beta particles	yes/ <u>no</u>	<u>                    </u>	<u>                    </u>
Gamma radiation	yes/ <u>no</u>	<u>                    </u>	<u>                    </u>

IV. REFERENCES

(1) The Merck Index, 11th Edition, 1989  
(2) Documentation of the TLV, 4th Edition, 1980  
(3) NIOSH Pocket Guide for Chemical Hazards, 1990  
(4) NEPA, Protection Guide on Hazardous Materials, 8th  
    Edition, 1984  
(5) Threshold Limit Values and Biological Exposure Indices  
    for 1991-1992.  
(6) 1910.1000, 1989.

SITE HEALTH AND SAFETY PLAN

A. General Information

Site Name Old Mt. Holly Road ID # NCD 986 172 518

Location 7911 Old Mt. Holly Road, Charlotte,  
Mecklenburg County, NC 28214

Proposed Date of Investigation November 17, 1993

Date of Briefing November 16, 1993

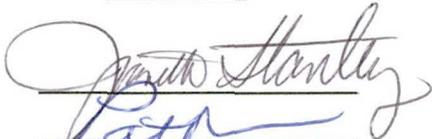
Date of Debriefing November 18, 1993

Nature of Visit (check one): On-Site Reconnaissance   X    
Off-Site Reconnaissance         
Sampling         
Remediation Overview       

Health Department Official Contacted Ms. Francis Duncan for John Gibson

Date of Contact November 10, 1993

Site Investigation Team: All site personnel have read the Site Health and Safety Plan and are familiar with its provisions.

<u>Personnel</u>	<u>Responsibilities</u>	<u>Signature</u>
Team 1 <u>Jeanette Stanley</u>	<u>team leader</u>	<u></u>
Team 1 <u>Pat DeRosa</u>	<u>reconnaissance</u>	<u></u>

Plan Preparation:

Prepared By: David Lilley, Industrial Hygiene Consultant

Reviewed By: Jack Butler, Environmental Engineering Supervisor


**B. SITE/WASTE CHARACTERISTICS**

Waste Type(s)  Liquid  Solid  Sludge  Gas  
 Characteristics  Corrosive  Ignitable  Radioactive  
 Volatile  Toxic  Reactive  Other

List Known or Suspected Hazards (physical, chemical biological or radioactive) on Site and their toxicological effects. Also, if known, list chemical amounts

HAZARD	WARNING PROPERTIES	EXPOSURE LIMIT
<u>Tetrachloroethylene</u>	<u>Odor Threshold (OT) = 4.68 - 50 ppm</u>	<u>25 ppm</u>
<u>Trichloroethylene</u>	<u>OT = 0.2 - 400 ppm</u>	<u>50 ppm</u>
<u>1,2-Dichloroethylene</u>	<u>OT = 0.085 - 500 ppm</u>	<u>200 ppm</u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>

Facility Description: Size unknown Buildings yes  
Disposal Methods Being Investigated Unknown: reportedly, there is a dry cleaner, a gas station, and tank farms in the immediate area.  
Unusual Features on Site (dike integrity, power lines, terrain, etc.):  
none known

History of the Site: In April of 1990, NC Superfund received lab data and a site map for a contaminated well belonging to Naomi Sogner in Paw Creek. The info was sent by the Mecklenburg County Environmental Protection Agency. The well was contaminated with the compounds listed on page 2. Ms. Stogner is currently using bottled water.

C. HAZARD EVALUATION

The site can be toured in level D protection. No sampling will be conducted at this time. Steel toed work boots will be worn while touring the site and decontaminated afterwards.

D. WORK PLAN INSTRUCTION

Map or Sketch Attached? yes  
Perimeter Identified? no  
Command Post Identified? no  
Zones of Contamination Identified? no

Personal Protective Equipment/Level of Protection:      C   X   D

Modifications \_\_\_\_\_



Location of Nearest Phone: unknown (nearby residences?)

Hospital (Address and Phone Number)

Mercy Hospital, 2001 Vail Avenue, Charlotte, NC 28207 (704) 379-5000

can handle chemically contaminated patients

Emergency Transportation Systems (Phone Numbers)

Fire 911

Ambulance 911

Rescue Squad 911

Emergency Route to Hospital Take a right onto Route 27 (Thrift Road) and travel south into Charlotte. Stay on route 27 into downtown Charlotte and exit onto Route 16 East. Take a right onto Queens Road, a left onto Randolph Road, then a left onto Caswell Road. The hospital will be on the right.

PREVAILING WEATHER CONDITIONS AND FORECAST Partly cloudy with a chance of rain, highs in the 70s.

**EQUIPMENT CHECKLIST**

- |  |  |
|--|--|
| <input type="checkbox"/> Air purifying respirator  | <input checked="" type="checkbox"/> First Aid Kit        |
| <input type="checkbox"/> Cartridges for respirator | <input checked="" type="checkbox"/> 3 gal. Deionized H2O |
| <input type="checkbox"/> Dust Mask                 | <input checked="" type="checkbox"/> Rainsuit             |
| <input type="checkbox"/> O <sub>2</sub> Indicator  | <input type="checkbox"/> Gloves (PE/PVC/nitrile/cloth)   |
| <input type="checkbox"/> Eye Wash Unit             | <input checked="" type="checkbox"/> Boots/Boot Covers    |
| <input type="checkbox"/> H NU                      | <input type="checkbox"/> Coveralls (tyvek/saranex)       |
| <input type="checkbox"/> OVA                       | <input checked="" type="checkbox"/> Eye Protection       |
| <input type="checkbox"/> Explosimeter              | <input checked="" type="checkbox"/> Hard Hat             |
| <input type="checkbox"/> Radiation Monitor         | <input checked="" type="checkbox"/> Decontamination      |
| <input type="checkbox"/> Detector Tubes and Pump   | Materials.   |

Poison Control Center - State Coordinator

Duke University Medical Center

Telephone: 1-800-672-1697

Box 3024

Durham, NC 27710

ASHEVILLE Western NC Poison Control Center  
704-255-4490 Memorial Mission Hosp.  
509 Biltmore Ave. 28801

HENDERSONVILLE Margaret R. Pardee Memorial Hospital  
704-693-6522 Ext. 555,556  
Fleming St., 28739

CHARLOTTE Mercy Hospital  
704-379-5827 2001 Vail Ave, 28207

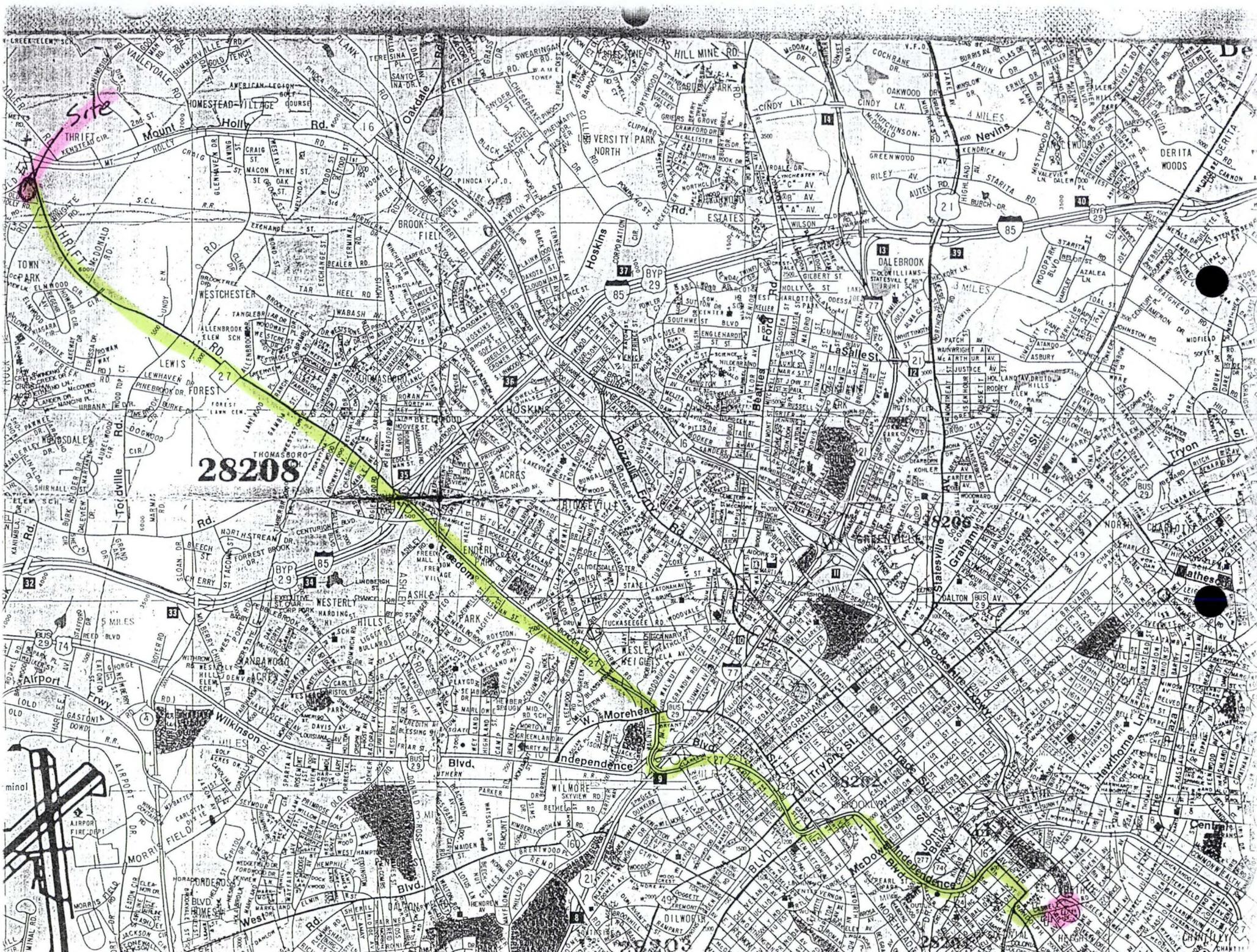
HICKORY Catawba Mem. Hosp.  
704-322-6649 Fairgrove Chur. Rd 28601

DURHAM Duke Univ. Med. Center  
1-800-672-1697 Box 3007, 27710

JACKSONVILLE Onslow Mem. Hospital  
919-577-2555 Western Blvd. 28540

GREENSBORO Moses Cone Hospital  
919-379-4105 1200 N. Elm St. 27420

WILMINGTON New Hanover Mem. Hospital  
919-343-7046 2131 S. 17th St. 28401



28208



AIRPORT

TERMINAL

FIRE DEPT

GAZON

OLD

ROAD

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Perchloroethylene

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula <u>C<sub>2</sub> Cl<sub>4</sub></u>	<u>1</u>
Natural Physical State at 25°C <u>liquid</u>	<u>2</u>
Vapor Pressure <u>14</u> mm Hg at 20°C	<u>2</u>
Melting Point <u>-8</u> °F/°C Boiling Point <u>250</u> °F/°C	<u>2</u>
Flash Point (open or closed cup) <u>N/A</u> °C/°F	<u>2</u>
Solubility - H <sub>2</sub> O <u>0.015%</u>	<u>2</u>
Other <u>misc with alcohol, ether, chloroform,</u> <u>benzene</u>	<u>1</u>

Physical Features: (odor, color, etc.) colorless liquid with an odor  
like ether or chloroform IP=9.32 eV (2) OVA Relative Response = 70%

II. TOXICOLOGICAL DATA

Standards: 50 ppm(3) TLV 25 ppm (4) PEL suspect human carcinogen IDLH 2

Routes of Exposure: Inhalation, Ingestion, Skin and/or Eye Contact (2)

Acute/Chronic Symptoms: Irritation of eyes, nose, and throat, nausea, flushed  
face and neck, vertigo, dizziness, incoordination, headache, carcinogen (2)

First Aid: Inhalation: artificial respiration; Ingestion: get medical  
attention immediately; Eye contact: irrigate immediately; Skin contact:  
soap and water wash immediately

Chemical Name: Perchloroethylene

III. HAZARDOUS CHARACTERISTICS

Reference

A. Combustibility Yes  No  2  
Toxic by-products \_\_\_\_\_  
\_\_\_\_\_

B. Flammability LEL none UEL none 2

C. Reactivity Hazard Incompatible with strong oxidizers, chemically active metals, such as barium, lithium, and beryllium 2

D. Corrosivity Hazard yes/no pH: \_\_\_\_\_

Neutralizing agent: \_\_\_\_\_

E. Radioactive Hazard	Exposure Rate	
Background yes/no	_____	_____
Alpha particles yes/no	_____	_____
Beta particles yes/no	_____	_____
Gamma radiation yes/no	_____	_____

IV. REFERENCES

1. The Merck Index, 11th Edition, 1989
2. NIOSH Pocket Guide to Chemical Hazards, 1987
3. Threshold Limit Values and Biological Exposure Indices for 1990-91, ACGIH.
4. CFR 1910.1000.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Trichloroethylene

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula <u>C<sub>2</sub> HCl<sub>3</sub></u>	<u>1</u>
Natural Physical State at 25°C <u>liquid</u>	<u>1</u>
Vapor Pressure <u>58</u> mm Hg at 20°C	<u>2</u>
Melting Point <u>-123</u> °F/°C Boiling Point <u>188</u> °F/°C	<u>2</u>
Flash Point (open or closed cup) <u>32</u> °C/°F	<u>3</u>
Solubility - H <sub>2</sub> O <u>0.1%</u>	<u>2</u>
Other <u>Ether, alcohol, chloroform</u>	<u>1</u>

Physical Features: (odor, color, etc.) Colorless liquid (unless dyed) with a sweet odor like chloroform 1P = 9.47 eV (2)

OVA Relative Response = 70%

II. TOXICOLOGICAL DATA

potential  
human

Standards: 50 ppm (4) TLV 50 ppm (5) PEL carcinogen(2) IDLH

Routes of Exposure: Inhalation, ingestion, skin and/or eye contact (2)

Acute/Chronic Symptoms: Acute: Headache, vertigo, visual disturbance, tremors, drowsiness, nausea, vomiting, eye irritation, dermatitis, irregular heartbeat, skin irritation; chronic: carcinogenic (2)

First Aid: Inhalation: artificial respiration; Ingestion: get medical attention immediately; Eye contact: irrigate immediately; Skin contact: soap and water wash immediately



HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: 1,2-Dichloroethylene

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula <u><math>C_2H_2Cl_2</math></u>	<u>1</u>
Natural Physical State at 25°C <u>liquid</u>	<u>2</u>
Vapor Pressure <u>180-265</u> mm Hg at 20°C	<u>3</u>
Melting Point <u>-56 to -115</u> °F/°C Boiling Point <u>113 to 140</u> °F/°C	<u>3</u>
Flash Point (open or closed cup) <u>36 - 39</u> °C/°F	<u>3</u>
Solubility - H <sub>2</sub> O <u>0.35 to 0.63%</u>	<u>3</u>
Other <u>alcohol, ether, most organic solvents</u>	<u>2</u>

Physical Features: (odor, color; etc.) Colorless liquid with an ether-like slightly acrid odor, like chloroform (3) IP = 9.65 eV

OVA Relative Response = 50%

II. TOXICOLOGICAL DATA

Standards: 200ppm (4) TLV      200 ppm (5) PEL      4,000ppm (3) IDLH

Routes of Exposure: Ingestion, Inhalation, Eye and/or skin contact

Acute/Chronic Symptoms: Irritation of the eyes and respiratory system, central nervous system depression (3)

First Aid: Inhalation: artificial respiration; Ingestion: get medical attention immediately; Eye contact: irrigate immediately; Skin contact: soap and water wash immediately

Chemical Name: 1,2-Dichloroethylene

III. HAZARDOUS CHARACTERISTICS

Reference

A. Combustibility	Yes <u>X</u> No <u>    </u>	<u>6</u>
	Toxic by-products <u>phosgene and</u>	<u>6</u>
	<u>HCl formation</u>	<u>    </u>
B. Flammability	LEL <u>9.7%</u> UEL <u>12.8%</u>	<u>6</u>
C. Reactivity Hazard	<u>Not reactive with common materials</u>	<u>6</u>
D. Corrosivity Hazard	yes/no pH: <u>    </u>	<u>    </u>
Neutralizing agent:	<u>    </u>	<u>    </u>
E. Radioactive Hazard	Exposure Rate	
Background	yes/no <u>    </u>	<u>    </u>
Alpha particles	yes/no <u>    </u>	<u>    </u>
Beta particles	yes/no <u>    </u>	<u>    </u>
Gamma radiation	yes/no <u>    </u>	<u>    </u>

IV. REFERENCES

1. The Condensed Chemical Dictionary, Sax, 11th Edition, 1987.
2. The Merck Index, 11th Edition, Sax, 1989.
3. Pocket Guide to Chemical Hazards, NIOSH, 1987.
4. Threshold Limit Values and Biological Exposure Indices for 1990-1991, ACGIH.
5. 29 CFR 1910.1000.
6. Chemical Hazard Response Information System, US Department of Transportation, 1987.

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary



October 21, 1993

Mr. Craig Benedikt  
NC CERCLA Project Officer  
U.S. EPA Region IV  
345 Courtland Street, N.E.  
Atlanta, GA 30365

SUBJECT: Site Inspection Sampling Plan  
Old Mount Holly Road PCE Site  
NCD 986 172 518  
Charlotte, Mecklenburg County, NC

Dear Mr. Benedikt:

This letter contains the proposed sampling plan for the Site Inspection of Old Mount Holly Road PCE Site in the Paw Creek area of Charlotte, Mecklenburg County, NC. The site is identified as the Old Mount Holly Road PCE Site at 7911 Old Mount Holly Road. The goal of sampling for this Site Inspection is to determine the source of groundwater contamination at 7911 Old Mount Holly Road and in other wells in the immediate area. Figure 1 is a map of the area within one mile of the site.

The Paw Creek area is a mixed residential/industrial area. Many of the homes in the immediate area were built in the 1940's and 50's and still use groundwater for drinking even though city water is available. The Paw Creek area has roughly 8 - 10 petroleum tank farms and lies at the intersection of two major petroleum pipelines--Colonial and Plantation (Fig. 1). The area has a history of petroleum spills (24 documented releases), totaling greater than 600,000 gallons. There are indications that the area has an elevated cancer rate, and a detailed health study is planned for the area. Extensive air quality monitoring is being conducted in the Paw Creek area by the NC Air Quality Section. Many citizens are concerned about their well water and are voluntarily connecting to city water.

In 1990, PCE contamination was discovered at 7911 Old Mount Holly Road when 85 drinking water wells were sampled for petroleum contamination following a large gasoline spill (> 120,000 gallons) at the Paw Creek Exxon Terminal (Figure 2). These well samples were analyzed for volatile organics. Naomi Stogner's well (7911 Old Mount Holly Road), located across the street from the Exxon Terminal and the now-vacant Castles Auto and Truck Services, Inc. property was discovered to contain 2,033 ppb tetrachloroethylene (PCE), 450 ppb trichloroethylene (TCE), and 199 ppb 1,2-dichloroethylene. Her home has since been connected to city water as part of an EPA removal action. Only Mrs. Stogner was using this well. A restaurant adjacent to the Stogner property had 32.3 ppb PCE and 4.7 ppb TCE in its well in 1990. The restaurant was denied a permit to continue in business unless it connected to city water, and the connection was done at the restaurant owner's expense. A total of 5 people were using this well.

Six other nearby drinking water wells showed trace levels of PCE during the 1990 monitoring. Mecklenburg County continued limited monitoring and the results from a 1992 sample showed that a well located two houses away from the Stogner residence had 280 ppb of PCE and 58 ppb of TCE. An EPA removal action was requested but denied because the well was not used for drinking. (The home had an unauthorized connection to city water for many years prior to sampling and had not been using the well water for drinking.)

In response to citizen concerns, approximately 400 wells have been sampled within about a 1 1/2 mile radius of 7911 Old Mount Holly Road since June of 1993. As of September 27, 1993, 107 drinking water wells serving approximately 268 people have been shown to contain detectable levels of PCE. Most of these wells were reported as containing 1 ppb, but 36 wells showed levels above 1 ppb. Ten of these wells were at or slightly above federal drinking water standards (5 ppb).

This widespread testing has helped to identify several possible sources of groundwater contamination in the Paw Creek area. A well at 520 Glasgow Road showed very high levels of PCE and its degradation products. This well is 1/2 mile west of the Stogner well and is directly across the street from the Consolidated Warehouse facility, a former textile operation with documented use of PCE. NC Superfund requested CERCLIS listing of Consolidated Warehouse in September 1993. Figure 2 shows the location of Consolidated Warehouse.

Two areas approximately 1 1/2 miles to the northwest of 7911 Old Mount Holly Road (Fig. 6) also show high levels of chlorinated hydrocarbons, but they do not contain PCE. These wells appear to be contaminated due to source(s) other than the one(s) that contaminated wells in the area of 7911 Old Mount Holly Road.

The major uses of tetrachloroethylene (or perchloroethylene, PCE) have been textile and dry cleaning industries (69%), cold cleaning and vapor degreasing of metals (16%), chemical intermediate (12%), and miscellaneous uses (3%). The degradation products of PCE are trichloroethene, dichloroethene, and vinyl chloride (chloroethene).

When the Preliminary Assessment was performed on this site in September 1991, the source of chlorinated solvents was unknown and it was speculated that a former drycleaning operation (currently owned by Bill's Transmission, located south of the site on Freedom Drive just north of the railroad tracks) was the source of the contamination (Figure 2). The drinking water well at the former drycleaners was clean in 1992 and showed low levels of a petroleum anti-knock additive (MTBE) and trichlorofluoromethane in August of 1993.

The source of contamination at 7911 Old Mount Holly Road is suspected to be from activities conducted on the Castles Auto and Truck Services, Inc. property, and from waste possibly deposited on the Exxon terminal property. The Castles' property was originally owned and developed by Exxon and used as a tanker truck cleaning and service area from the 1950s to 1975. The property was leased to Charlotte Truck Service (a tow truck company) until 1981. Mr. Castles bought the property from Exxon in 1981 and operated a paint and body shop in the building until 1990. Because both the Exxon terminal and the Castles properties were once one parcel and are probably interconnected via drains and underground lines, sampling is being proposed on both properties.

In 1991, soil sampling was conducted on the now-vacant Castles Auto and Truck Services, Inc. property which lies approximately 400 feet north of the Stogner well. Soil samples surrounding all known underground tanks on the Castles property were collected and analyzed for volatiles and semivolatiles. The sampling and analyses were performed by a firm hired by Exxon. This firm used a PID to screen samples in the field for organics and had those samples analyzed that gave positive results. Figures 3 & 4 show the soil sampling locations and results for chlorinated hydrocarbons. The sample taken at the oil/water separator (O-1) was taken where the monitoring well was installed (Fig. 5; MW-OW). Significant levels of PCE were detected around UST B and the oil/water separator (Fig. 4). No PCE was detected around Tank C and low levels were detected near Tank A. All sample locations showed high levels of volatile or semivolatile organics representative of petroleum products.

Tank contents were also analyzed. PCE was not detected, but not all tanks were analyzed by methods that would detect PCE. In some of the cases where PCE was a target compound, detection limits were elevated due to the sample matrix. Tank A (estimated volume of 4,500 gallons) results indicated compounds typical of varsol. Tank B (estimated volume of 1,500 gallons) was found to contain an aqueous and non-aqueous layer. The non-aqueous layer contained high levels of semivolatiles. The aqueous layer contained high levels of acetone and 2-butanone. Tank C (estimated volume of 1,500 gallons) contents were analyzed only for TPH at the time of tank removal from the ground in 1990. The tank was again sampled during the 1991 event and no PCE was detected. Tank C remains on the Castles property in the fenced area. No samples are recommended for Tank C because it is no longer in place and its appearance and integrity have been altered during removal and testing.

The oil-water separator contents were sampled during a sampling event in 1990 and analyzed only for TPH and BETX. The oil/water separator contents were not sampled during the 1991 event. Tank D (estimated volume of 1,000 gallons) was reportedly used to contain fuel oil for the frame house and the contents were not sampled. The oil/water separator and Tanks A, B, & D are still in place on site. All products have been removed from the tanks.

Figure 5 shows a layout of the site, tank locations, and results from volatile analysis of monitor wells on the Castles property. All monitor wells are approximately 20 feet deep. None of this data is CLP quality because holding times were exceeded and preservatives were not added.

A 1947 drawing recently provided to NC Superfund by Exxon Corporation (with a number of revisions since the original 1947 drawing) shows a sand filter bed on the southern end of the Castles property (Fig. 5). This filter bed is approximately 25' x 75' and is shown to begin approximately 12 feet from the southern end of the Castles building and extends 75' southward. The 1951 floor plan of the building now owned by Mr. Castles shows 6" cast iron floor drains that lead to a 6" terra cotta drain which enlarges to a 8" terra cotta drain. This drain is shown to flow with gravity in a southerly direction to a "culvert" (as labeled on the 1951 drawing), located near the sand filter bed (Fig. 5). This culvert may pass under the road toward the east from the site (Fig. 8).

The bathroom drains to a "sewer" which is also in the area of this sand filter bed. A line from the oil change area of the building goes through a 2" slop oil line which leads in the direction of Tank B or the oil/water separator. Since PCE is heavier than water, a possible source of PCE is the oil/water separator (Fig. 5). Neither the connection point of the 2" slop oil line nor the discharge point of the oil/water separator are shown in the 1951 floor plan. Mr. Castles has reported that the terra cotta drain from the oil water/separator flows directly toward the road and the Exxon terminal. It may drain into the same culvert as the floor drains, into the sand filter bed, or across the road to the septic or oil/water separator system on the Exxon terminal property (Fig. 6). The vent from the paint shop is over the area where tank B is located (Fig. 5). If PCE were used for vapor degreasing, this would be the area where the vapor would exit.

A search for a septic tank was conducted by Exxon on the southeastern side of the Castles property, but none was located. There are no public records of a septic tank on the Castles or Exxon terminal property. Drawings and correspondence from Exxon indicate that the septic tank on the Exxon property was removed in 1991 (Fig. 6). The old oil/water separator on the Exxon terminal property has been replaced. The septic tank for the small frame house to the north of the Castles has been sampled and is free of chlorinated hydrocarbons.

Figure 6 shows locations of monitor wells on the Exxon property and chlorinated hydrocarbon results from the analysis of these wells in 1990. Full volatile scans are not routinely performed on these wells. The two bedrock wells did not show chlorinated hydrocarbon contamination in 1991.

## SOURCE SAMPLING

The source of contamination is not yet fully characterized. Unless a significantly larger area or volume can be found, the amount of waste that can be estimated to have been dumped on the property (the once-filled volume of tank B) makes the waste characteristics fairly small. None of the currently available data on the source is CLP quality because holding times were exceeded.

### SAMPLING ON CASTLES PROPERTY

There are several possible sources that will be sampled on the Castles property. These include area around Tanks B and C (removed), oil/water separator, sand filter, culvert, vent area and terra cotta pipe area.

Soil borings will be taken at locations shown on Figures 4 and 5 and discussed below. Where possible, proposed samples are numbered the same as former samples whenever sampling locations are approximately the same. Each sample will be analyzed for volatile and semivolatile organic compounds and hazardous metals.

- Tank B:        Sample B-1--location B-1 at 8'  
                  Sample B-3--location B-3 at 8'  
                  Sample B-4a--location B-4 at 1'  
                  Sample B-4b--location B-4 at 8'
- Tank C:        Sample C-3--one subsurface soil sample in area where Tank C was located, approximately 2' below where fill ends. Records indicate that the bottom of the tank, now removed, was 8' below land surface, so sample depth will be approximately 10'.
- Oil/Water separator:  
                  Sample 0-1a--Sample at 5' in area of outflow of pipe.  
                  Sample 0-1b--Sample at 8' in area of outflow of pipe  
                  Sample 0-2--Sample of product in oil/water separator, if possible
- Terra Cotta pipe:  
                  Sample TC-1--Sample at 8' along path of terra cotta pipe  
                  Sample TC-2--Sample at 8' along path of terra cotta pipe
- Sand Filter:  
                  Sample SF-1a--Sample at 8' in area of sand filter, approximately 70' due south of southwestern corner of Castles building.  
                  Sample SF-1b--Sample at 10' in area of sand filter, approximately 70' due south of southwestern corner of Castles building.
- Culvert:        Sample CUL-1--Sample at 1' depth where culvert empties onto property on eastern side of Castles property.
- Background:   Sample E--Sample at surface, 1', and 8' depths will be taken to serve as background.

## SAMPLING ON EXXON PROPERTY

Locations F, G, H, & I will be sampled at 8' depth and analyzed for volatiles and semivolatile organic compounds and hazardous metals. The surface sample will be taken in the ditch draining the Exxon property (location J is the approximate location) and will be analyzed for the same analytes. These sample locations are indicated on Figure 6.

## SURFACE WATER SAMPLING

The Castles property rests at the top of a small hill and is above the headwaters of three small streams. Two of these streams are unnamed tributaries (UT) to Paw Creek, the other is a UT to Long Creek. Mecklenburg County has sampled Paw Creek and Long Creek under wet weather and dry weather conditions this year. PCE contamination has been found in the surface water at sampling point 5. This is the surface water pathway from the Exxon terminal facility. If wastewater containing PCE were sent to the septic tank or oil/water separator on the Exxon terminal property, this would be the stream into which this waste would drain. A map of the sampling locations is given in Figure 7.

1993 Surface Water Sampling by Mecklenburg County

Sampling date	type event	sites where compounds detected	results
2/3/93	dry weather	5	tetrachloroethylene, 26 ppb
5/3/93	dry weather	1 3 4 6	acetone, 197 ppb acetone, 104 ppb; MTBE, 34 ppb acetone, 250 ppb no sample, stream dry
5/20/93	wet weather	3 5 6 7	MTBE, 30 ppb Tetrachloroethylene, 11 ppb MTBE, 56 ppb MTBE, 17 ppb
6/22/93	dry weather	only site 9 sampled	nothing detected

Note: If not listed on the above table, nothing was detected.

The Mecklenburg County sampling locations may not be adequate to document surface water contamination because the topographic map shows that the stream where PCE was detected is intermittent. Surrounding residents will be interviewed to determine if the stream ever runs dry. If the Mecklenburg sampling location is not adequate to positively locate the PCE-containing sample within the surface water pathway, one sediment and water sample will be taken in the stream where PCE was detected at the point where the intermittent stream becomes a perennial stream. This stream becomes perennial within 1 mile of the site. Figure 1 shows the proposed sampling location.

## AIR SAMPLING

The NCDDEM Air Quality Section is conducting air monitoring in the area. This is due to the large number of complaints of gasoline fumes in the area and the higher than normal incidence of cancer. The roughly 8-10 tank farms in the immediate area are being treated as one site for the purposes of this study. PCE is on the Target Compound List and results will be made available to NC Superfund.

## GROUNDWATER SAMPLING

### Drinking Water Wells

Over 400 drinking water wells have been analyzed for VOCs in 1993. Only the three drinking water wells that showed traces of VOCs in the 1990 sampling and have not been resampled will be tested.

Name & Address	Previous sampling Date(s) & results	Justification
1. Debbie Ashe 1100 Kiker Cir.	4/20/90, trace 1,2-dichloroethylene. Not sampled since 1990. Several contaminated wells on street.	> 1/2 mi. but along fracture lines
2. Mary Miller 8120 Metts Rd.	8/22/91, trace trichloroethylene 9/3/91, trace trichloroethylene and 1,1- dichloroethylene	Not resampled since 1991. 1/4-1/2 mi.
3. Morrow 6601 Old Mt. Holly Rd.	4/20/90, trace PCE, not sampled since 1990.	1/4-1/2mi.

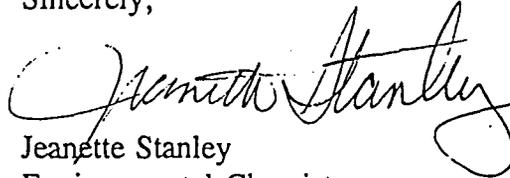
Mecklenburg County's sampling procedure does not require that pH be tested when testing for VOCs. In addition, the well depths of the contaminated wells are not known. These parameters will be recorded during the sampling event. All sampling locations are indicated on Figures 1 & 2.

Monitoring Wells

The two bedrock wells on the Exxon terminal property will be sampled for VOCs, semivolatiles, and hazardous metals. Monitoring wells MW-26, MW-13, MW-30 will be sampled and analyzed for VOCs, semivolatiles, and hazardous metals. Monitoring well MW-42 will serve as background (Fig. 5 & 6).

If you have any questions regarding this sampling plan, please contact me at (919) 733-2801.

Sincerely,



Jeanette Stanley  
Environmental Chemist  
Superfund Section

Attachments

Approved by: \_\_\_\_\_ date: \_\_\_\_\_

Craig Benedikt  
NC CERCLA Project Officer

MEMO

DATE: November 10, 1993  
TO: File  
FROM: Jeanette Stanley, Environmental Chemist,  
NC Superfund Section  
RE: Old Mount Holly Road PCE Site  
Charlotte, Mecklenburg County, NC  
NCD 986 172 518



I spoke with Robert Morris, Region IV EPA (404) 347-5065. I asked if the sample plan for the Old Mount Holly Road PCE Site looked good enough for him to approve the November 30 - December 2, 1993, dates for sampling on the site. He said that it did and that he looked forward to receiving the updated chart of proposed samples via FAX today.

✓ FAX'd

Robert Morris  
November 10, 1993

SAVE

Following is table of samples recommended in the Old Mount Holly Road PCE Site Sample Plan. Samples remain very close to those discussed in the original sample plan forwarded to Craig on October 21, 1993.

Following the table, you will find three figures which show the sampling locations as modified. These replace the figures provided in the original sample plan. Other figures remain unchanged.

Please call me as soon as possible if you are recommending changes. I have initiated the planning for this sampling visit. We will be onsite Nov. 30, Dec. 1, and Dec. 2, 1993.

Thanks,

Jeanette Stanley  
NC Superfund  
(919) 733-2801

Old Mount Holly Road PCE Sample List and Description--  
November 10, 1993

Groundwater is about 13 feet below land surface.

OM-B1a-SL	SOIL 8'	VOA Ext Metals	onsite around suspected tank	Figure 4, location B-1
OM-B1b-SL	SOIL 10'	VOA Ext Metals	onsite around suspected tank	Figure 4, location B-1
OM-B04-SL	SOIL 8'	VOA Ext Metals	onsite around suspected tank	Figure 4, location B-4
OM-C03-SL	SOIL 10'	VOA Ext Metals	onsite below bottom of where removed tank was located	Figure 4, location C3
OM-002-CN	Contents of Oil/water separator	VOA Ext Metals		Figure 4
OM-TC1-SL	SOIL 8' (max.) OVA will determine optimum sample depth	VOA Ext Metals	soil along pathway of terra cotta pipe leading from oil/water separator	Figure 5, Location TC1, approximately 6' from outside wall of building
OM-TC2-SL	SOIL 8' (max.) OVA will determine optimum sample depth	VOA Ext Metals	"	Figure 5, location TC2, approximately 6' from outside wall of building
OM-SF1-SL	SOIL 8' OVA will determine optimum sample depth	VOA Ext Metals	soil in area of reported sand filter bed-- approximately 20' south of southwestern corner of building*	Figure 5, location SF1

OM-CUL-SL	SOIL surface	VOA Ext Metals	soil in area of culvert drainage from Castles property	Figure 5, location CUL
OM-E01-SL	SOIL Surface	VOA Ext Metals	background	Figure 5, location E1, in ditch alongside road
OM-E02-SL	SOIL 8'	VOA Ext Metals	background	Figure 5, location E2, approximately 3' west of MW-42
OM-F01-SL	SOIL 8'	VOA Ext Metals	in general area of old oil/water separator	Figure 6, location F (should be flagged by NC Superfund personnel during presampling visit)
OM-G01-SL	SOIL 8'	VOA Ext Metals	in general area of old septic tank, slightly downgradient	Figure 6, location G (should be flagged by NC Superfund personnel during presampling visit)
OM-H01-SL	SOIL 8'	VOA Ext Metals	in line between suspected tank (B) on Castles property and MW-13 which showed PCE	Figure 6, location H
OM-I01- SL	SOIL 8'	VOA Ext Metals	in general area of MW-13	Figure 6, location I

OM-J01-SL	SOIL (Sediment) Surface	VOA Ext Metals	in ditch draining property	Figure 6, location J, under outfall
OM-DW1-PW	Drinking water	VOA, pH Ext Metals	4/20/90 sample showed trace 1,2-DCE not sampled since then. several contam. wells on street-->0.5 mi but along fracture lines	Figure 1, location 1 Debbie Ashe 1100 Kiker Circle
OM-DW2-PW	Drinking water	VOA, pH Ext Metals	8/22/91 trace TCE, 9/3/91 trace TCE & 1,1-DCE; not resampled since then. 1/4 - 1/2 mi.	Figure 1, location 2 Mary Miller 8120 Metts Rd.
OM-DW3-PW	Drinking water	VOA, pH Ext Metals	4/20/90 trace PCE, not sampled since then	Figure 1, location 3 Morrow 6601 Old Mt. Holly Rd.
OM-M13-MW	monitoring well	VOA Ext Metals	PCE hit in 1991, no data since	Figure 6, MW- 13
OM-MWB-MW	monitoring well	VOA Ext Metals	PCE hit in 1991, no data since	Figure 6, MW- B, 2" dia., 17' deep
OM-M42-MW	monitoring well	VOA Ext Metals	background	Figure 5, MW- 42 (well is 2" diameter and 17' deep)
OM-MB1-MW	monitoring well	VOA Ext Metals	bedrock well on Exxon Property, no hit in 1991, no analytical data for PCE since then.	Figure 6, BRW-1 (BRW-1 and BRW-2 Bedrock wells are 73' and 50' deep, not sure which is which depth)

OM-MB2-MW	monitoring well	VOA Ext Metals	bedrock well on Exxon Property, no hit in 1991, no analytical data for PCE since	Figure 6, BRW-2
OM-SW1-SW	surface water	VOA Ext Metals	surface water pathway, 500' from beginning of stream, Stream begins just below railroad spur under which Exxon discharge stream passes. (Entire length of stream is wetland)	, see enlarged topo map
OM-SW2-SD	surface water sediment	VOA Ext Metals	sediment in surface water pathway where PCE was detected, location described above	Same location as OM-SW1-SW
OM-SW3-SD	surface water sediment	Metals	background in comparable stream	Figure 9

\*Should encounter sand

**LEGEND**

● = DRILLED BORING

▲ = HAND AUGER BORING

UST = UNDERGROUND STORAGE TANK



UST C  
EXCAVATION

C2

FENCE

C3

C1

GATE

APPROXIMATE UST B LOCATION

FILL  
PORT

B3

B2

B1

B4

BRICK  
BUILDING

O-1

FREEDOM  
DRIVE

RING	DEPTH (FL. BGL)	TETRACHLOROETHENE (ug/kg)	TRICHLOROETHENE (ug/kg)	1,2-DICHLOROETHENE (ug/kg)
B1	3-5	230	17	110
	5-7	--	--	--
	7-9	95,000	--	--
	9-11	18,000	--	--

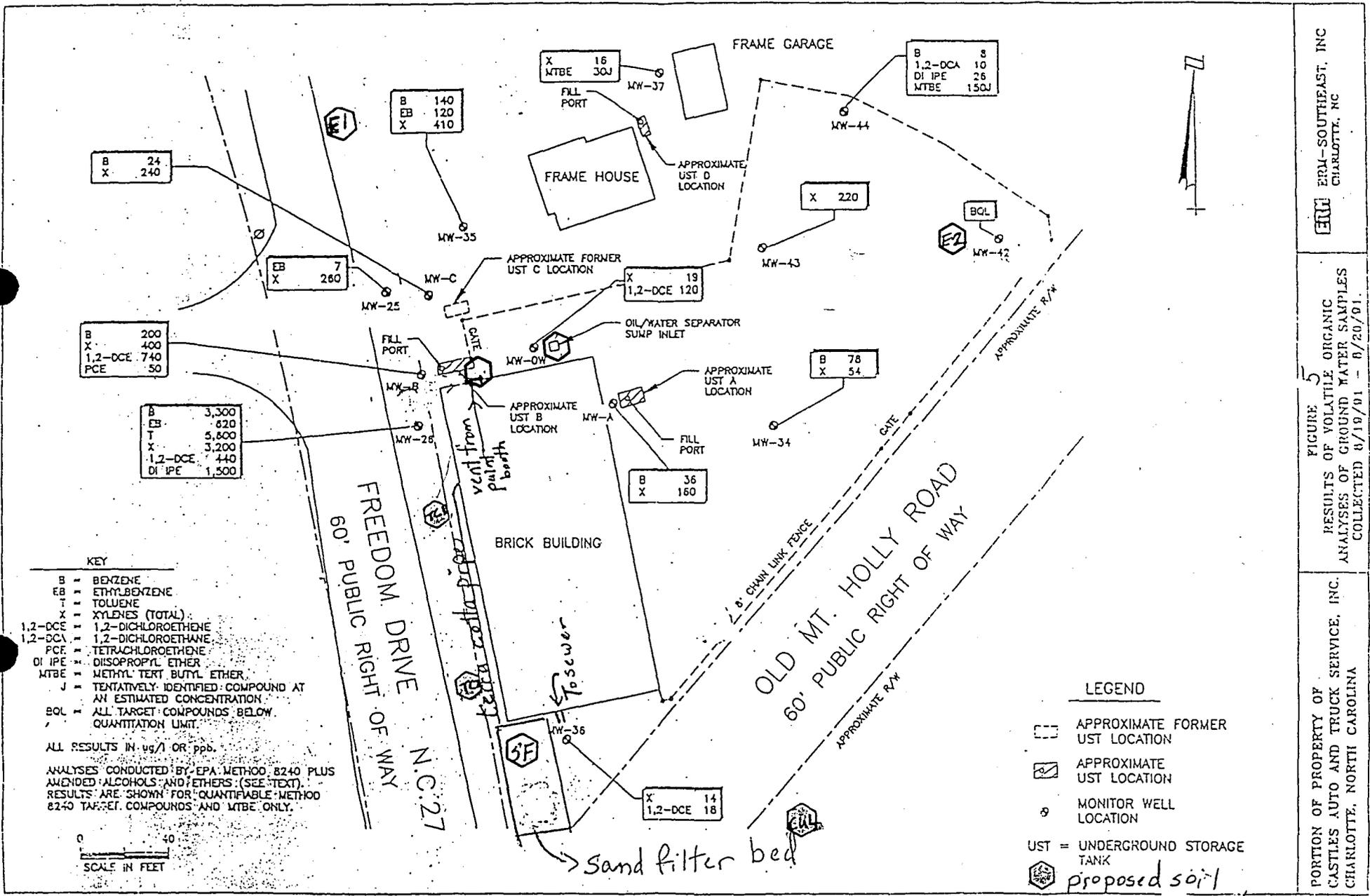
BORING	DEPTH (FL. BGL)	TETRACHLOROETHENE (ug/kg)
O-1	1'-3'	--
	3'-5'	2,200
	7'-9'	--
	9'-11'(a)	--/--

BORING	DEPTH (FL. BGL)	TETRACHLOROETHENE (ug/kg)
B2	3-5	--
	5-7	--
	7-9	140
B3	3-5	--
	5-7	--
	7-9	--
B4	5-6	--
	7-8	1,400
	9-10	--



FIGURE 4. LOCATION OF SOIL BORINGS NEAR USTs B AND C CASTLE'S AUTO AND TRUCK SERVICE CHARLOTTE, NORTH CAROLINA

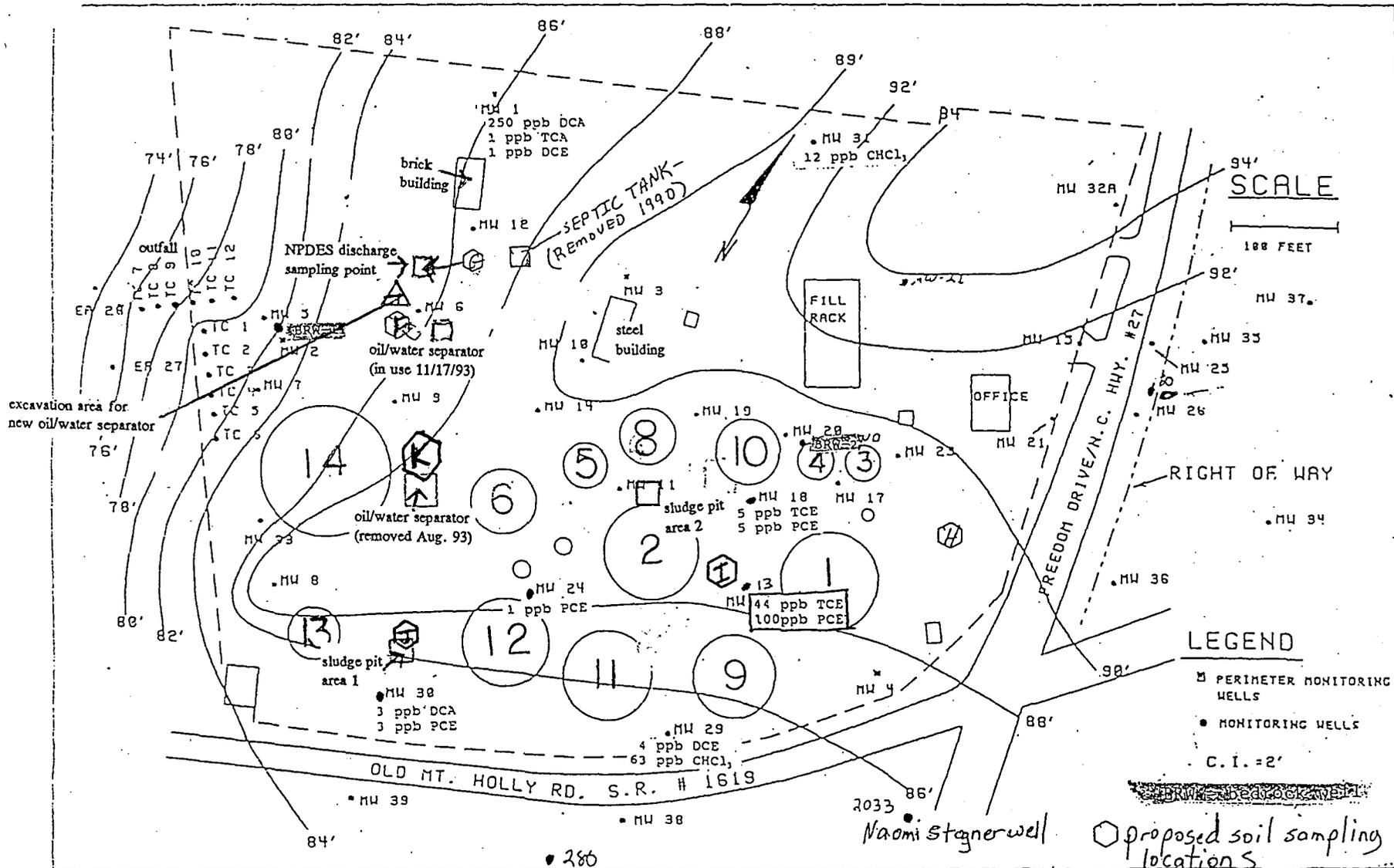
**ERM** ERM-SOUTHEAST, INC



ERM-SOUTHEAST, INC  
CHARLOTTE, NC

FIGURE 5  
RESULTS OF VOLATILE ORGANIC  
ANALYSES OF GROUND WATER SAMPLES  
COLLECTED 8/19/91 - 8/20/91.

PORTION OF PROPERTY OF  
CASTLES AUTO AND TRUCK SERVICE, INC.  
CHARLOTTE, NORTH CAROLINA

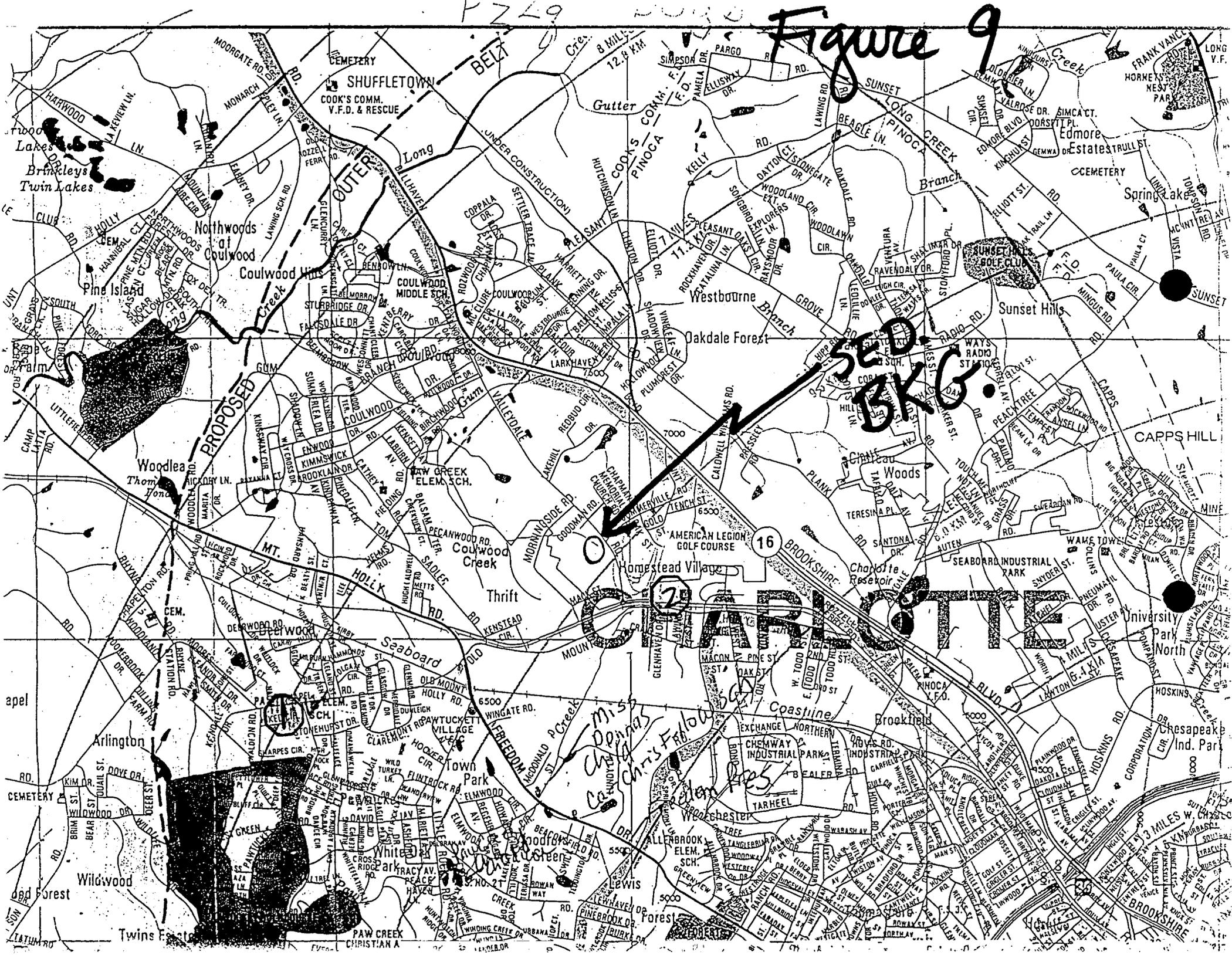


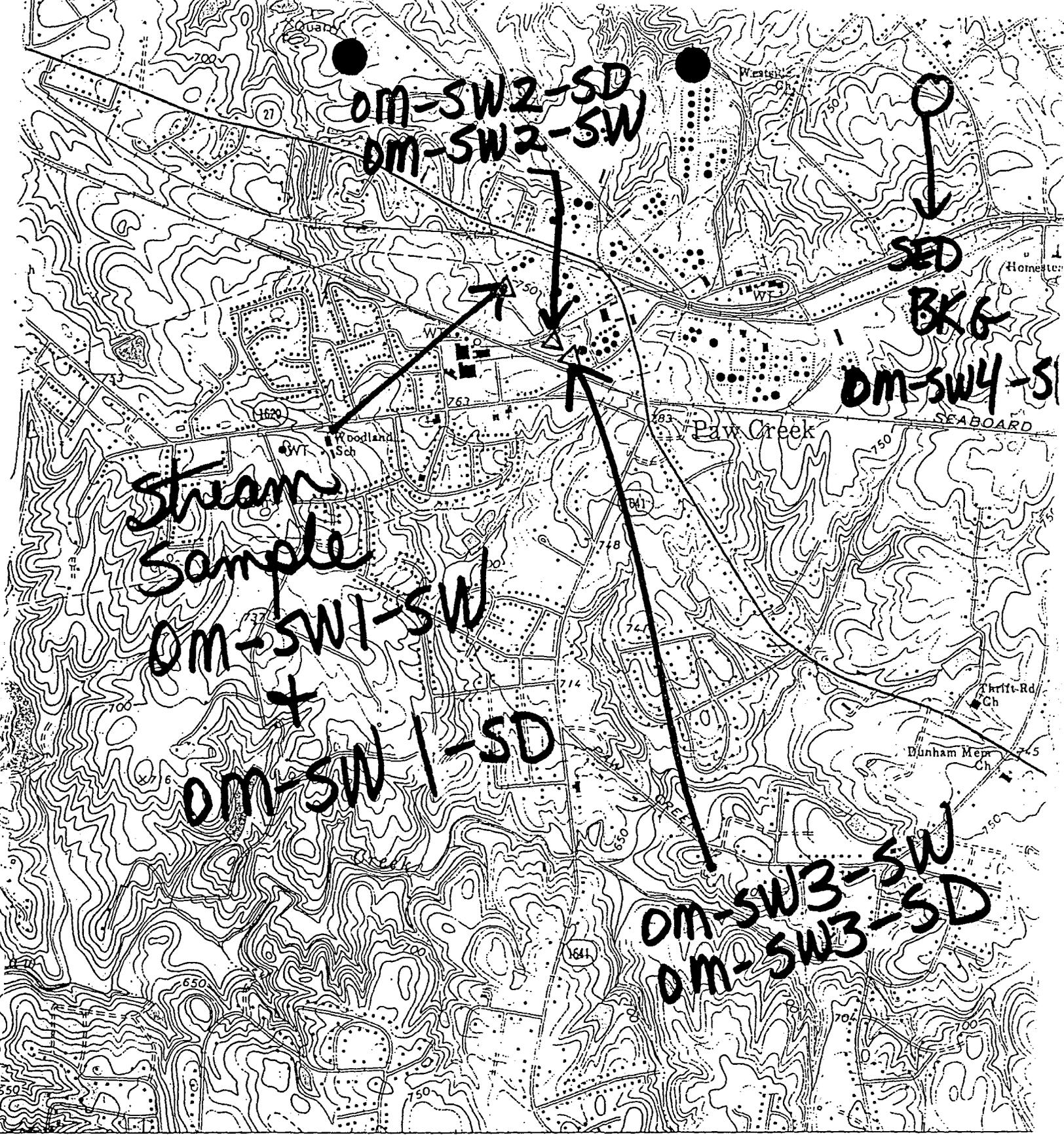
EA ENGINEERING,  
SCIENCE, AND  
TECHNOLOGY, INC.

DRAWN JKS	DATE
REVIEWED AMH	DRAWING NO. 1097925

FIGURE 6 GROUNDWATER CONTOUR MAP BASED ON STATIC WATER LEVELS ON SEPTEMBER 24 AND 25, 1998.  
EXXON BULK DISTRIBUTION TERMINAL,  
CHARLOTTE, NORTH CAROLINA

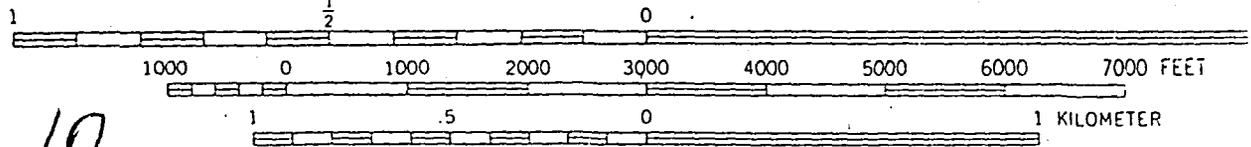
# Figure 9





57'30" 1504 1505 (CHARLOTTE WEST) 1507  
 4854 III NW

SCALE 1:24 000



CONTOUR INTERVAL 10 FEET  
 NATIONAL GEODETIC VERTICAL DATUM OF 1929

Figure 10.

FAX TRANSMITTAL		# of pages ▶ 1
To: Jeanette Stanley	From: Craig Benedikt	
Date Agency: NCDEHNR	Phone #	404-347-5065
Fax #	919-733-4811	
NSN 7540 01 3 7 7368	5099 101	GENERAL SERVICES ADMINISTRATION

**Monitoring Wells**

The two bedrock wells on the Exxon terminal property will be sampled for VOCs, semivolatiles, and hazardous metals. Monitoring wells MW-26, MW-13, MW-30 will be sampled and analyzed for VOCs, semivolatiles, and hazardous metals. Monitoring well MW-42 will serve as background (Fig. 5 & 6).

If you have any questions regarding this sampling plan, please contact me at (919) 733-2801.

Sincerely,

*Jeanette Stanley*  
 Jeanette Stanley  
 Environmental Chemist  
 Superfund Section

**Attachments**

Approved by: Craig A. Benedikt Date: 11/18/93  
 Craig Benedikt  
 NC CERCLA Project Officer